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abstracts

Istruzioni per la consultazione degli abstracts

- Alle pagine 3, 4 e 5 trovate *l'indice*:
- ogni pagina contiene l'indice delle sessioni, e quindi degli abstract, presentati nel giorno.
- Gli abstracts sono esposti consecutivamente nelle rispettive sessioni di presentazione, come da programma.
- Pertanto a seconda delle giornate, delle sessioni (comunicazioni, video, poster) e degli orari, potete identificare l'abstract desiderato.
- nel banner del pdf in alto a sinistra cliccando 'indice' compare l'elenco qui sotto rappresentato: cliccando sulla data andate ai singoli giorni ed alle singole sessioni.

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10 maggio 2018

11:00 - 12:30

sala Visconti

Video1 - Top Uro-Oncological Surgery

Moderatori: FRANCO MONTEFIORE, GAETANO GROSSO, GIANFRANCO SAVOCA

1. CISTECTOMIA RADICALE ROBOT ASSISTITA CON CONFEZIONAMENTO INTRACORPOREO DI NEOVESCICA ILEALE ORTOTOPICA "Y-SHAPED"

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Il video descrive la tecnica utilizzata per eseguire il confezionamento intra-corporeo di Neovescica ileale Y-shaped in pazienti sottoposti a Cistectomia Radicale Robot Assistita e Linfadenectomia estesa per Cancro della vescica muscolo invasivo (MIBC). La tecnica prevede l'isolamento di 45 cm di ileo a circa 20 cm dalla valvola ileocecale. La continuità intestinale viene ottenuta mediante anastomosi latero-laterale attraverso Stapler da 60 mm.

Successivamente viene posto un punto di reperi in corrispondenza di quello che sarà il neomeato vescicale.

Come descritto dal video, la neovescica viene conformata a Y, previa detubularizzazione e confezionamento del neocollo in modo simile a quanto eseguito in caso di VIP. Tuttavia, le branche corte della Y sono asimmetriche, essendo quella properistaltica più lunga rispetto a quella antiperistaltica. I due ureteri verranno abboccati alle estremità delle branche corte previo posizionamento di Stent doppio J 8Ch.

2. ROBOT-ASSISTED LAPAROSCOPIC PARTIAL CYSTECTOMY, URACHAL RESECTION AND PELVIC LYMPHADENECTOMY FOR URACHAL ADENOCARCINOMA

P. Fedelini¹, F. Chiancone¹, M. Fedelini¹, M. Fabiano¹, C. Meccariello¹

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This video describes the main steps of robot-assisted laparoscopic partial cystectomy with en bloc resection of the urachus and bilateral pelvic lymphadenectomy for a urachal adenocarcinoma. A 40-year-old man was referred to our attention for episodic gross haematuria and dysuria. Magnetic resonance imaging (MRI) revealed a solid mass in the dome area of the urinary bladder. Diagnostic TURB showed a mucinous adenocarcinoma. With the patient in supine position, five ports are placed transperitoneally. The patient was placed in the 28° Trendelenburg position. After the cranial dissection into Retzius' space, the bladder dome was excised with the urachus and the umbilicus. The bladder was closed in two layers with continuous running sutures. Bilateral pelvic lymphadenectomy was performed. The operative time was 120 minutes. No intraoperative and postoperative complications occurred. The pathology report described a poorly differentiated adenocarcinoma with extensive extracellular mucin deposition. Two out of seventeen lymph nodes were positive for metastases. The robotic technique is a feasible approach to treat urachal cancer. It can reduce surgical morbidity, postoperative pain, and recovery time, while maintaining the oncologic principle of safe local excision.

3. OFF-CLAMP LAPAROSCOPIC PARTIAL NEPHRECTOMY: PREOPERATIVE IMAGING AND TUMOR ENUCLEATION

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The video shows two patients underwent off-clamp laparoscopic tumor enucleation after a meticulous analysis of preoperative imaging. The first case is a 57 year old woman diagnosed with 3.4 cm right renal tumor, normal renal function, PADUA score 6, located on segment 9, 70% exophytic, 15 mm distant from collecting system, absence of feeding arteries and integrity of the pseudocapsule surrounding the tumor. The second case is a 50 year old gentleman with stage 3 CKD diagnosed with cm right oncocytoma involving segments 3 and 1, 30% exophytic, 3 mm distant from the collecting system, no feeding arteries identified and a complete pseudocapsule surrounding the tumor.

In the first case operative time was 115 minutes, estimated blood loss 250 ml and the patient was discharged on postoperative day 3. Final pathology showed pT1a chromophobe RCC.

In the second case operative time was 125 minutes, estimated blood loss 300 ml and the patient was discharged on postoperative day 3. Final pathology confirmed the diagnosis of oncocytoma.

Preoperative imaging of renal masses with a standardized report and a meticulous analysis of tumor characteristics can help urologists to offer patients a tailored surgical approach to maximize renal function preservation without undermining oncologic principles and safety.

4. ROBOT-ASSISTED LAPAROSCOPIC RETROPERITONEAL LYMPHADENECTOMY FOR METASTATIC KIDNEY CANCER

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This video describes the main steps of the robot-assisted laparoscopic retroperitoneal lymphadenectomy for lymph node metastasis occurred after radical nephrectomy for renal cell carcinoma. Previous laparoscopic right nephrectomy showed a renal clear cells adenocarcinoma with rhabdoid and sarcomatoid features (Fuhrman grade 3-4). With the patient in left lateral position five ports were placed transperitoneally. Open access technique was used for primary trocar. Three robotic trocars were placed on pararectal, the fourth port 2cm to the iliac crest. The laparoscopic Air-Seal port was placed between the central and the right port on the xifopubic line. The first step was the liberation of intense retroperitoneal adhesions due to previous surgery. Hem-o-lok clips were used to control peritumoral vessels. A large lymphatic retroperitoneal mass of about 10cm in diameter was en-bloc excised. The hemostasis was obtained with the use of Floseal and Tabotamp. The operative time was 120 minutes. Estimated blood loss was minimal. No intraoperative and postoperative complications occurred. The patient was discharged four days after surgery. The pathology report confirmed lymphatic metastasis of renal clear cells carcinoma with rhabdoid/sarcomatoid features (Fuhrman grade 4). The Robot-assisted laparoscopic retroperitoneal lymphadenectomy is a feasible approach to treat metastatic lymphnodes.

5. ENUCLEAZIONE LAPAROSCOPICA TRANSPERITONEALE CLAMPLESS DI NEOPLASIA RENALE SINISTRA POSTERIORE T2

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Il video descrive il trattamento laparoscopico di una voluminosa massa renale sinistra polare inferiore di oltre 8 cm, in paziente donna di anni 29.

Vengono inquadrare le sedi dei trocars transperitoneali e gli steps chirurgici:

- mobilizzazione del colon discendente ed esposizione del rene,
- isolamento dell'ilo vascolare e posizionamento di vessel loop sull'arteria renale sinistra principale,
- extrarotazione del rene,
- preparazione dell'adipe perirenale,
- identificazione della massa e marcatura della linea di sezione,
- enucleazione della massa,
- trattamento di vaso arterioso diretto alla massa neoplastica,
- completamento dell'enucleazione,
- sliding suture emostatica,
- posizionamento di surgiflo,
- dissezione della massa dall'adipe perirenale,
- posizionamento della massa in endobag.

I tempi chirurgici sono stati 120 min, le perdite ematiche 400 ML. Non sono state registrate complicanze perioperatorie.

l'esame istologico è esitato in clear cell carcinoma ISUP III, necrosi presente, capsula presente e continua, margini chirurgici negativi.

Nonostante la sede della neoplasia, sita sulla superficie posteriore del rene, nel caso trattato è stato adottato l'accesso transperitoneale per ridurre al minimo la manipolazione della massa, operando di fatto una dissezione del rene dalla neoplasia, che sarebbe invece comparsa nel campo operatorio subito frontalmente, se fosse stato adottato l'accesso lomboscopico.

6. TIPS AND TRICKS FOR ROBOT-ASSISTED RADICAL NEPHRECTOMY AND LEVEL III INFERIOR VENA CAVA TUMOR THROMBECTOMY

G. Simone¹, G.. Tuderti¹, C.. Kundavaram², A.L. De Castro Abreu², S. Chopra², R. Sotelo², L. Misuraca¹, M. Ferriero¹, F. Minisola¹, M. Aron², M. Desai², S. Guaglianone¹, I. Gill², M. Gallucci¹

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INTRODUCTION: In this video, we highlight surgical tips and tricks for: extensive retrohepatic IVC dissection during level 3 thrombus IVC thrombectomy, thrombus cranial margin control, and intraoperative complications management that can occur during IVC thrombus dissection.

METHODS: The following surgical tips and trips were highlighted: an extensive retrohepatic IVC dissection, with liver mobilization, essential for a wide exposure of retrohepatic IVC; the use of an occluding balloon fogarty catheter under transesophageal control, and, alternatively, ICG guidance, to better identify and control level 3 IVC tumor thrombi cranial edge; management of intraoperative complications during IVC opening and thrombus dissection.

RESULTS: An extensive retrohepatic IVC dissection, the use of an occluding balloon fogarty catheter under transesophageal control, and ICG guidance, represent very useful tools, to better identify and control level 3 IVC tumor thrombi cranial edge.

The management of unforeseen intraoperative complications, during IVC opening and thrombus excision, is a crucial point, during robotic IVC surgery.

CONCLUSIONS: Robotic IVC thrombus surgery represents a challenging procedure, and requires highly expertise skills in advanced urologic robotic surgery.

7. ICG MARKED OFF-C ROBOTIC PARTIAL NEPHRECTOMY FOR ENDOPHYTIC RENAL TUMORS: PROOF OF CONCEPT AND INITIAL SERIES

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INTRODUCTION: We describe a novel technique to mark endophytic renal tumors with transarterial superselective delivery of indocyanine green (ICG)-lipiodol mixture, in patients selected for purely off clamp (OC) robotic partial nephrectomy (RPN).

METHODS: Between September 2017 and October 2017, 10 consecutive patients with predominantly or totally endophytic renal masses underwent superselective transarterial tumor ICG marking and bland embolization immediately before OC-RPN. Preoperative transarterial bland embolization was performed with superselective delivery of lipiodol-indocyanine green mixture (1 to 2 by volume, mixing 1.5 millilitres of indocyanine green with 3 millilitres of lipiodol) into tertiary order arteries feeding the tumor. Purely OC-RPN was performed.

RESULTS: Median PADUA nephrometry score was 10 (IQR 9-11). Median operative time was 75 minutes (IQR 65-85), median estimated blood loss was 250 mL (IQR 200-350). Bland embolization was uneventful in all patients. Hilar clamp was not necessary in any case. Perioperative course was uneventful for all patients and median hospital stay was 3 days (IQR 2-3). Surgical margins were negative in all cases. Eight (80%) patients had renal cell carcinoma histology at final pathology.

CONCLUSIONS: Key benefits of this technique include a quick identification of the mass, avoiding any use of intraoperative ultrasound imaging, and a real time control of resection margins thanks to an improved visualization of tumor.

8. INDOCYANINE GREEN GUIDED ROBOT ASSISTED RADICAL NEPHRECTOMY AND LEVEL III INFERIOR VENA CAVA TUMOR THROMBECTOMY

G. Simone¹, L. Misuraca¹, G.. Tuderti¹, M.. Ferriero¹, F. Minisola¹, S.. Guaglianone¹, M.. Gallucci¹

¹ Istituto Nazionale Tumori "Regina Elena" (Roma)

INTRODUCTION: Radical nephrectomy with IVC thrombectomy is a challenging procedure. A crucial step is the control of the cranial edge of the thrombus, which can be made with the assistance of indocyanine green (ICG) guidance.

METHODS: Preoperative embolization of right renal arteries was performed. Liver was mobilized to expose the retrohepatic IVC. IVC was prepared, cranially and distally to the neoplastic thrombus. All lumbar veins, visible short hepatic veins and right gonadal vein were secured, while left renal vein was isolated for tourniquet encircling.

Right renal arteries were transected and previously applied tourniquets were synched down after confirming with near infrared fluorescence (NIF) the proper control of cranial thrombus edge. Cavotomy was performed and the thrombus delivered and secured into an endo catch bag. IVC lumen was copiously irrigated with heparin saline solution and IVC suture performed. After tourniquets removal, NIF was used to confirm proper restoration of IVC flow. Finally, nephrectomy was completed.

RESULTS: Operative time was 300 minutes. EBL was 350 ml. Patients was discharged on 7th postoperative day. Postoperative

course was uneventful.

CONCLUSIONS: NIF imaging represents a significant technical advancement in management of level III IVC tumor thrombi, to improve control of cranial thrombus edge and to confirm proper restoration of IVC flow after cava suture.

9. ROBOT-ASSISTED LEFT ADRENALECTOMY WITH LEFT RENAL VEIN TUMOR THROMBECTOMY

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INTRODUCTION: we highlight surgical steps of a left adrenalectomy and left renal vein tumor thrombectomy.

METHODS: preoperative CT scan highlights a 7 cm left adrenal mass with a tumor thrombus extending into the left renal vein. Left renal vein was prepared and encircled with tourniquet distally to the renal vein branch. After left renal artery identification, left renal vein was furtherly prepared and a tourniquet was placed proximally to the left renal vein branch. Left adrenal vein was hence isolated and encircled with tourniquet. Left renal vein and left adrenal vein tourniquets were cinched down and a renal vein was incised and the thrombus meticulously removed, in conjunction with the adrenal vein ostium. Left adrenal vein was stapled and the specimen secured into an endocatch bag. The left renal vein was sutured and all tourniquets removed, without any blood leakage. The adrenal mass was then progressively dissected and secured in an endobag.

RESULTS: Operative time was 170 minutes. Perioperative course was uneventful and patient was discharged in postoperative day 5. The pathologic report showed a primary adrenocortical carcinoma. Post operative CT scan was negative.

CONCLUSIONS: robot-assisted left adrenalectomy with left renal vein tumor thrombectomy is a feasible and safe treatment option in a tertiary referral center, with favourable perioperative outcomes.

10 maggio 2018

11:00 - 12:30

sala **Farnese**

Comunicazioni 1 - Calcolosi e Chirurgia Ricostruttiva

Moderatori: ENZO PALMINTERI, CLEMENTE MECCARIELLO, ROBERTO MIGLIARI

1. RIRS AND SPINAL ANESTHESIA IN HIGH RISK PATIENT: A BRIEF EXPERIENCE

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Objective

The miniminvasive approach for the treatment of renal stones is higher and higher grown during the last few years, becoming a standard procedure even in big stones. The standard approach involves a General Anesthesia (GA), due to the need of a controlled breath of patient, regarding to the safety of procedure. Unfortunately, not all the patient are great candidates to GA. In literature there are few studies concerning RIRS (Retrograde Intra Renal Surgery) with Spinal Anesthesia (1). We propose to compare procedure's results in the few cases treated, concerning patients with complex comorbidities due to which GA wasn't indicated.

Materials and Methods

Since 2014 up to 31st october 2017 we performed 335 RIRS for the treatment of renal stones; 331 were performed under general anesthesia and only 4 patients with spinal anestehsia (2 men and 2 women, medium age 72, medium stone size surface 180 mm2). Two patients had stent previously to procedure.

Preliminary anesthesiological evaluation extimated these patients as high risk for intubation with American Society of Anesthesiologists (ASA) Physical Status classification system of 3-4, which for this reason was not indicated. The comorbidities was: 2 plegic with many comorbidities; 1 advanced Parkinson disease; 1 compromised from the cardiocirulatory view point.

We use urethral sheets 35mm 10-12 ch diameter, flexible ureterorenoscopes and usual RIRS procedure, with Holmium laser 30 Watt fiber 270 microm.

All patients underwent to antibiothical therapy by the association of cefalosporin and gentamicin for up to 3 days in the postoperative, as our standars indicate.

Results

Medium operatory time was 40 minutes, all patients were stone free at the end of the surgery. No stent was left, only a temporary urethral catheter for 48-36 hours in the postoperative.

Visual analog scale (VAS) 1-10 in the postoperative : medium value of 3.

Discussions

Traditionally, RIRS procedures are performed under General Anesthesia (GA). The reason for this is unclear, but it may be referred to a larger tidal volume under Spinal Anestehsia, resulting in greater diaphragm and renal movement and this could cause instability to reach stones with a greater risk of renal damage during laser lithotripsy (1); even if it is proven that apnea during RIRS facilitates the procedure (2), a high confident surgeon could modulated the procedure with no significantly improve in operating times.

Nevertheless PercutaneousNephroLithotripsy (PCNL), a higher risk procedure for bleeding instead of RIRS, has many studies which proven its faseability under Spinal Anesthesia (SA).

Some studies confirm that RIRS with SA can be completed with no anesthetic conversions and with the same efficacy and safety compared with GA, with high stone free rates and low morbidity in patients with different ASA physical status (3).

Conclusion

Even few in numbers we performed RIRS with SA with stone free results in patients with ASA value 3-4 with many comorbidities; we obtained a good pain control, referring to VAS scale. The spontaneous ventilation of the patients and the greater tidal volume could create some difficulties during surgery, but we didn't have any complication intra and postoperative.

We could consider that RIRS could be safely done under SA, in selected high risk patient for GA.

Reference

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2. Tuna Katarag, Abdulkadir Tepeler, Ibrahim Buldu, Muzaffer Akcay, Muhammed Tosun, Mustafa Okan Istanbuloglu, Abdullah Armagan: "Is micro-percutaneous nephrolithotomy surgery technically feasible and efficient under spinal anesthesia?" Urolithiasis (2015) 43: 249-54
3. Guzel O, Tuncel A, Balci M, Karakoyunlu N, Aslan Y, Erkan A, Senel C: "Retrograde Intrarenal Surgery is equally efficient and safe in patients with different American Society of Anesthesia physical status" Ran Fail (2016) ; 38(4): 503-7.

2. RESULTS AND COMPLICATIONS OF RETROGRADE APPROACH (URS / RIRS) IN PEDIATRIC UROLITHIASIS

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Objective

Pediatric urolithiasis is an endemic problem in developing countries, but the incidence is increasing in industrialized countries as well [1]. The management of pediatric urolithiasis is nowadays increasing in the current urologic practice. Treatment of this disease follows the same surgical procedures as in adults. We report our experience in retrograde treatment (URS / RIRS) of pediatric urolithiasis.

Materials and Methods

We have retrospectively reviewed all the kidney units (URs) which underwent to URS / RIRS at our center from January 2009 to December 2016 up to 16 years of age. The data reported include: lithiasic volume, radiological exposure, operative time, complications according to Clavien classification at 3 months from intervention and stone free rate.

Results

We have performed 47 procedures (30 RIRS and 17 URS) in 40 URs with an average age of 8.46 years (range: 2-16 years).

The URs treated in pre-school age (0-4 yy) were 11 with an average age of 3.72 years; 19 in pre-puberty (5-11yy) with an average age of 8.1 years and 10 in puberty (12-16 yy) with an average age of 14.3 years.

In 22 cases a pre-operative urethral stent was applied (9 cases with age <4, 8 between 5-11 and 5 between 12-16).

The average lithiasic volume was 1.154 cm² [2]. The mean operative time was 78.4 ± 41.64 minutes (range: 15-140 min) with a radiological exposure of 24 "± 28" (range: 5 "–1'20").

At the end of the procedure a Double J (DJ) was applied in 25 cases and a Mono J (MJ) in 22 cases.

The stone-free rate after one procedure has been 82.5% (33/40). Seven patients required a second intervention to achieve a complete lithiasic remediation. All of these 7 cases had single or multiple lithiasis with a volume greater than 1.767 cm². The complications recorded at 90 days from the intervention include a case (2.1%) of migration of a fragment in the ureter causing hydronephrosis and renal colics after 49 days to the operation (Clavien 3b) that was treated with URS; 5 cases (10.6%) which required the administration of painkillers during the first 48 hours postoperative (Clavien I); 2 cases of urinary tract infections during hospitalization (4.2%) treated with antibiotic therapy (Clavien II).

Discussions

The miniaturization of the instruments, the increasing use of the retrograde approach to treat voluminous lithiasis in adults associated with the increased incidence of pediatric urolithiasis have led the endourologist to treat more patients in pediatric age.

However, particular attention should be paid to treatment planning in patients under 6 years of age, where, based on our experience and the literature data [3], it is useful to apply a urethral stent for kidney stones or proximal and mid-lumbar ureteral stones before surgery. In our cases, in only three patients under 6 years of age, no pre-operative DJ stent has been required, since it were two patients with stones located in the distal part of the ureter. In pre-puberty cases (5-11 years), a preoperative DJ has been required in 44%, of which 37.5% were patients under 8 years of age.

Another consideration should be the choice of the type of urethral stent to be applied at the end of the intervention (DJ versus MJ) to avoid excessive use of painkillers or access to the hospital for intolerance associated to the presence of the stent, bearing in mind the need to submit the patient to an additional anesthesia for DJ removal. In 60% of patients under the age of 5 years we preferred to apply a MJ, leaving a DJ alone in cases requiring a second intervention, where the procedure lasted more than an hour or where there was the presence of lithiasic sand related to the dusting of the stone.

Conclusion

Our experience shows how retrograde access is safe even in the pediatric patient with stone free-rate rates that can be matched with the adult population [4-5].

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2. Tiselius HG, Andersson A. Stone burden in an average Swedish population of stone formers requiring active stone removal: how can the stone size be estimated in the clinical routine? Eur Urol 2003;4(3):275-81.
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3. IMPACT OF SELF-WATCHING DOUBLE J STENT INSERTION ON PAIN EXPERIENCE OF MALE PATIENTS: OUR EXPERIENCE

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Objective

To confirm safety and feasibility of double J stent (DJ) insertion under local anesthesia and to assess the effect of detailed explanation and observing double J stent insertion on pain experience of male patients

Materials and Methods

Over a period of six months, from January to June 2017, forty-seven patients who attended urinary stone disease clinic and have indications for DJ insertion (intractable renal pain or ureteric colic, fever and pyuria, moderate to severe degree of hydronephrosis, pre external shock wave lithotripsy for renal stone more than 2 cm and anuria due to urinary stone) were included in this study and were randomized by drawing lots to observe or not to observe their DJ stent insertion. Patients were grouped into group A (those patients who were to view their procedure) (n=20) and group B (those patients who were not allowed to view their procedure) (n=27). For group A, a video monitor was placed so that both patient and operating urologist could see the procedure. For group B, the monitor was positioned so that only the operating surgeon could visualize the procedure and not the patient. The procedure was performed in urology operating room in by the same urologist. After positioning of the patient (lithotomy position) and scrubbing with povidone-iodine solution and standard draping, 2% of lidocaine gel was instilled in urethra and DJ stent was inserted in all subjects in standard fashion, with fluoroscopy guidance, using 22 F rigid cystoscope with 30 degree lens with favorable outcomes. Patients' pre- and post- procedure pulse rate, systo/diastolic blood pressure and procedure time were recorded. Immediately after surgery asked patients to record their pain experience using a 10 cm unmarked Visual Analogic Scale (VAS).

Results

The pulse rate and systolic and diastolic blood pressures before the procedures were found to be comparable for both groups of patients as well as the duration of the procedure were not much different for the two groups. Among the cardiovascular parameter recorded after the surgery only the systolic blood pressure increase was statistically different ($p \leq 0,05$) between the group ($+ 15 \pm 4$ mmHg – groupA vs $+ 35 \pm 6$ mmHg – groupB). The mean pain score experienced by the patients from groupB is almost two times higher than the mean pain score of groupA (4 ± 1 vs 8 ± 1 ; $p \leq 0,05$). Five patients from groupA experienced no compared to none from group B. Eleven patients from group B experienced severe pain as compared with only one patient in group A. These findings confirm that those patients who could view the procedure experience less pain as compared to those who did not view the procedure.

Discussions

DJ stent is generally inserted in operating room with or without fluoroscopic guidance using either flexible or rigid cystoscopy as both tolerated well and no significant difference in outcomes. Local/regional or general anesthesia is still an issue of discussion despite a higher rate of side effects than local/regional anesthesia, general anesthesia remains the most commonly used anesthetic technique for this surgery. Pain during cystoscopy can be influenced by type, volume, time, and temperature of lubricant used, viewing and detailed explanation of the procedure. Cornel et al. demonstrated in their study that history of cystoscopy is unlikely to affect the pain experience during the procedure(1). On the opposite side, other studies, showed that viewing the procedure has effect on pain experience of patients(2,3). Many published studies tested the pain during diagnostic, followed up cystoscopy and minor therapeutic procedure (DJ removal), and assessed the feasibility of DJ stent insertion under local anesthesia. To our best knowledge only few work has assessed feasibility of DJ stent insertion under local anesthesia and tested the effect of detailed explanation and real-time video monitoring of the procedure on pain experience as one subject(2,3). VAS is a valid tool with good responsivity and acceptability and it has been used extensively in the medical literature. Our study shows that patients who had the chance to view

the procedures experience less pain compared to those who did not. Overall, there is an increase in the means of the vital signs after the procedure, but it seems that group B has experienced a more significant increase if compared to group A (systolic blood pressure)

Conclusion

DJ stent insertion under local anesthesia is safe and feasible. We recommended self-watching and detailed explanation to patients who underwent DJ stent insertion to reduce the pain associated to the procedure.

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4. TRANSPARENCHIMAL NEPHROLITHOTOMY IN A PATIENT WITH BILATERAL STAGHORN KIDNEY STONES, HIGH NUMBER OF COMORBIDITIES AND RECURRENT UROSEPSIS

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Objective

A case report to evaluate the role of open transparenchimal nephrolithotomy access in order to reduce the risk of uroseptic events in a patient with high number of comorbidities and recurrent urosepsis.

Materials and Methods

We describe the case of a 67 year old women with chronic kidney disease, unilateral poorly functioning kidneys with functional exclusion of left kidney, bilateral staghorn kidney stones, percutaneous bilateral nephrostomy and right double J, recurrent urosepsis, alcoholism, lung resection for tumor, serious cachexia.

Uroculture was recurrent colonized with Klebsiella and Pseudomonas and The cultures guided us in antibiotic choice.

We used CT scans for classification of stone size, location and density (1) Additionally, in planning the operative approach.

Surgery in patients with this number of comorbidities has always been challenging and requires special care with a multidisciplinary approach (3-4). In this case report we described the management of a patient with bilateral staghorn kidney stones, elevated rates of comorbidities and recurrent urosepsis. We known that Sepsis secondary to urinary tract infection can significantly increase morbidity and mortality in patients who have undergone PCNL.

We examine CT scans and the elevated rates of comorbidities of the patient for the pre operative planning and the strategies to perform in operating room. Specially we considered the High risk of urosepsis.

In relation to that, we decided to perform a open transparenchymal nephrolithotomy access in order to reduce the risk of uroseptic events (2).

We describe renal access, patient position, tract dilatation, nephroscopes, lithotripsy and post operative management.

The procedure was Performed in lateral recumbent position with a minimal lombotomy incision. We isolated the vascular peduncula, urether and so we are able to mobilize the kidney. We performe a Ultrasound guided puncture of the inferior calix and than, after a contrastography, we done a Access to the collecting system using successive Amplatz dilators for the tract dilatation. The access sheath finally was 24 fr and we used nephroscope 18 fr. To fragment the stone we used Pneumatic lithotripter and than we remove fragments with N-Perc device.

Results

The operative time was been of 130 minutes. The blood loss of 150 cc. The average rate used to irrigate was 20 litres of physiologic saline solution. The patient was afebrile during the recovery period.

Renal drainage upon termination PCNL leaving nephrostomy 8 fr and bladder drainage .

The recovery time was 6 days and the serum levels of creatinine decrease from 5,8 mg/dl to 1,8 mg/dl.

Discussions

After 20 days since the procedure , we decided to do a CT scan and the result was that into the right kidney there are only small fragments inferior to 5 millimeter. The patient is good, is asintomatic without nephrostomy and we decided to perform in the next mounth a nephrectomy at the other side for the unfunctional left kidney.

Conclusion

Although there are not enough data and evidence to make a clear conclusion, we suggest that transparenchymal nephrolithotomy can be performed safely in this kind of patients with high risk of urosepsis and elevated number of comorbidities.

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5. THE ROLE OF 99MTC-DIETHYLENETRIAMINEPENTACETATE (99MTC-DTPA) SCINTIGRAPHY IN ROBOTIC ANDERSON-HYNES DISMEMBERED PYELOPLASTY IN ADULTS. OUR EXPERIENCE

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Objective

To review our experience and suggest our definition of success of robotic Pyeloplasty.

Materials and Methods

We reviewed our single surgeon experience with robotic transperitoneal pyeloplasty. 25 cases between 2013 and 2017 found eligible for our study, each patient underwent 99mTcdiethylenetriaminepentacetate (99mTc-DTPA) scintigraphy in order to assess kidney function before and after the procedure.

Results

Only 18 of the 25 patients had a clear improvement on the scintigraphic criteria. Mean DRF was 35% before, 34.4 % after the procedure (4 months later, 1 month after the removal of the ureteric stent). 1 significant bleeding reported. 19 of the 25 patients had pain before the procedure but only 8 had pain/mild discomfort after.

Discussions

The limitations of our study clearly include the retrospective nature of the analysis, an absence of pain scale and the short term follow-up. Despite that we feel confident to say that there is no imaging method able to really assess the success of the procedure.

Conclusion

Renal scintigraphy findings alone is not enough in order to define the success of Robotic transperitoneal pyeloplasty. The persistence of discomfort/pain after the procedure should be evaluated as well.

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6. INTRAOPERATIVE AND POSTOPERATIVE OUTCOMES OF LAPAROSCOPIC PYELOPLASTY FOR MANAGING RECURRENT URETEROPELVIC JUNCTION OBSTRUCTION. A SINGLE INSTITUTIONAL ANALYSIS OF 38 PATIENTS

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Objective

Open redo pyeloplasty is still considered the gold standard for managing recurrent ureteropelvic junction obstruction. With the advent of video-laparoscopy, minimally invasive redo pyeloplasty has become a realistic alternative to redo open pyeloplasty, even if this approach is still anecdotal in literature (1). The aim of this study was to describe our single surgical team experience with Anderson-Hynes transperitoneal laparoscopic pyeloplasty (LP) in the treatment of recurrent ureteropelvic junction obstruction (UPJO).

Materials and Methods

We enrolled 38 consecutive patients who underwent transperitoneal laparoscopic redo pyeloplasty between January 2007 and January 2015 at our department. All patients were symptomatic and all patients had a T1/2 > 20 minutes at pre-operative renal scan. In all cases a transperitoneal pyeloplasty using the Anderson-Hynes technique was performed, by a single surgical laparoscopic team (2). Intraoperative and postoperative complications have been reported according to the Satava and the Clavien-Dindo system. All patients underwent a periodical clinical and radiological follow-up. Treatment success was evaluated by a 12 months postoperative renal scan. All data were collected in a prospectively maintained database and retrospectively analyzed. Descriptive statistics of categorical variables focused on frequencies and proportions. Means and standard deviation were reported for continuously coded variables.

Results

Mean stricture length was 0,99±0,45 cm (range, 0,2-2,2 cm) on IVU or retrograde pyelography. Mean operating time was 103,16±30 minutes. The mean blood loss was 122,37±73,25 ml. The mean postoperative hospital stay was 4,47±0,86 days. No intraoperative complications occurred according to the Satava system (3). 6 out of 38 patients (15,8%) experienced postoperative complications according Clavien-Dindo classification (4) (Table 1). The success rate was 97,4% for flank pain and 97,4% for hydronephrosis. Post-operative renal scan showed radiological failure in one out of 38 (2,6%) patients, relative success in 2 out of 38 (5,3%) patients and total success in 35 out of 38 (92,1%) of patients. The radiologic failure, occurred in the patient that experienced the urine leakage. The patient underwent a laparoscopic pyeloplasty at our hospital for the third time with relative success at post-operative DTPA renal scan.

Discussions

Laparoscopic redo pyeloplasty is considered a very challenging procedure due to the possibility to find a lot of peripelvic and periureteric fibrosis. Moreover some adjuvant maneuvers may be required to success, like the use of a pelvis flap or ureterocalicostomy (5). The high rate of success in our series can be related to the short length of the failed stenosis without the need for additional challenging maneuvers. In the most complex cases we need to perform the isolation of all kidney and distal ureter in order to perform a tension free anastomosis and to avoid the twisting of the anastomosis. Some limitations of the study herein include, firstly, the short follow-up time. Another limitation is that all procedures were performed by a single surgical team with significant expertise in laparoscopic surgery, which may restrict the generalizability of our results to centers with more limited laparoscopic experience. Moreover this is a retrospective observational non-comparative study.

Conclusion

Laparoscopic redo pyeloplasty is a feasible procedure for the treatment of recurrent UPJO, with a low rate of post-operative complications and an high success rate in high laparoscopic volume centers.

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7. ROBOT-ASSISTED LAPAROSCOPIC RENAL CYST REMOVAL WITH SENHANCE ROBOT

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Objective

In this study of factibility, we tested and review our technique of robot-assisted laparoscopic renal cyst removal using a new robotic device (SenHance) on human patients.

Materials and Methods

We set up an operating theatre to test SenHance on consecutive laparoscopic robot assisted renal cyst removal to be performed in total anesthesia. The console incorporates the following main components: an ergonomic seat, the Robotic Master (RM) with haptic handles, a 3D-HD monitor, an eye-tracking system (ETS), a keyboard and a touchpad, and one foot pedal. The ETS is an infrared-based eye tracking system that detects which point the surgeon is looking at. There was one surgeon placed at computer-console and one surgeon placed at the surgical table. We adapted the laparoscopic technique to perform the procedure. The haptic sensation can be used for pushing or pulling to estimate elasticity and consistency of tissues and controlling the tensility of the sutures when tying. Low-cost disposable or reusable instruments were used.

Results

To date, we performed 8 renal cyst removal with SenHance robot. Three robot's arms were used. 5 procedures were on the right kidney, while 3 were on the left one. The mean surgical time was 45.77 minutes (range 31-72 min). The mean diameter of the cysts was 9.4 cm (range 7.5-15 cm). The mean blood loss was 58.6 ml (range 20-100 ml). Mean cost per intervention was 950 Euros.

Discussions

Range of competing robotic surgical systems is expected to enter the market in the next 5 years. The new technology offered has the potential to improve surgical ergonomics. With the market dominated by the high-performing but expensive generations of the da Vinci for almost 20 years, newer, economic machines may make robotic surgery accessible to wider populations. The high cost associated with robotic surgery was partly explained by Intuitive Surgical being the sole producer of commercial robotic surgical systems. In 2019 a number of their intellectual property patents are due to expire. Competing master-slave system Telelap Alf-X by TransEnterix has now entered the market with sales made in Italy and Japan, and has an application with the U.S. Food and Drug Administration pending. Several other systems are also expected to be marketed within the next 5 years. Increased competition, reusable instruments, and a resulting reduction in cost will lead to a stronger economic argument for robotic-assisted surgery, and expansion to more centers and regions is likely.

The closed console of da Vinci envelops the surgeon's face and compromises his or her situational awareness within the operating theatre. Telelap Alf-X and the newer Revo-I, currently undergoing trials in Korea, promise open surgeon consoles with the potential to improve operating ergonomics. The Telelap Alf-X monitor requires the surgeon to wear 3D glasses and incorporates eye-tracking, whereas Revo-I boasts a 3D high definition monitor.

A major limitation of robotic surgical systems was the lack of haptic feedback compared to traditional laparoscopic technique. Telelap Alf-X is the first commercial robotic platform to incorporate haptic feedback technology. Via counter-movement of the console handles, the surgeon receives tactile information regarding force and its direction applied at the surgical site. Haptic feedback while operating increases surgical awareness and improves security [1].

Conclusion

Robot-assisted laparoscopic renal cyst removal using SenHance is safe, feasible and reproducible procedure. Moreover it offers a good perception when instruments touch each other avoiding collision between robotic arms. It also offers a reduction of costs per intervention.

Reference

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8. TRANSNEPHROSTOMIC ICG GUIDED ROBOTIC URETERAL REIMPLANTATION FOR URETEROILEAL STRICTURES AFTER ROBOTIC CYSTECTOMY AND NEOBLADDER

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Objective

We describe our initial experience with robotic ureteral reimplantation for ureteroenteric anastomotic strictures in patients previously treated with robotic radical cystectomy (RARC) and intracorporeal neobladders with the use of near infrared fluorescence (NIRF) imaging after transnephrostomic injection of indocyanine green (ICG).

Materials and Methods

From April 2015 to October 2017, nine consecutive patients underwent robotic ureteral reimplantation in one tertiary referral center. All patients previously underwent RARC-N with the same standardized technique [1].

All patients previously underwent percutaneous nephrostomy and at least one antegrade stenting and stricture dilatation attempt. Surgical steps were described: Steep trendelenburg position, transnephrostomic injection of ICG to identify the lumbar ureter with NIRF (Figure 1A), careful ureteral dissection on the surface of the ureter/s to avoid injuring the iliac vessels with alternate use of conventional imaging and NIRF (Figure 1B), spatulation of the ureters, JJ stent insertion and finally uretero-

ileal anastomosis.

Baseline, perioperative and functional outcomes data are reported.

Results

Median time from RARC to uretero-anastomotic stricture diagnosis was 5mo (IQR 2-6). Median stricture length was 1,5 cm (IQR 1-2). Median operative time was 140 minutes (IQR 81-155) and median length of stay was 5 days (IQR 3-9).

All cases were completed robotically. Neobladder Boari flap was created in all cases.

Intraoperative blood loss was negligible. One patient experienced a Clavien grade 2 complication (urinary tract infection requiring antibiotics). One patient required blood transfusion (Clavien grade 2). One patient underwent ileum resection and anastomosis due to perforation (Clavien IIIb). At a median follow-up of 7 mo (IQR 4-25) no patients developed recurrence (CT scan) or worsening of renal function (new onset CKD stage 3b-4).

Discussions

Robotic ureteral reimplantation for uretero-enteric strictures is a safe and highly effective procedure. NIRF imaging provides an easy guide to identify and progressively dissect the ureter. Thanks to the high success rate and to the excellent functional outcomes, robotic reimplantation has become a first treatment option in our center.

Conclusion

Transnephrostomic ICG Guided Robotic Ureteral Reimplantation for Ureteroileal Strictures after Robotic Cystectomy and Neobladder is a safe and highly effective procedure.

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9. MINIMALLY INVASIVE TREATMENT OF IATROGENIC RENAL FISTULA USING FIBRIN SEALANT

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Objective

we present our experience with six cases of persistent iatrogenic urinary fistulas where minimally invasive endoscopic treatment with fibrin sealant was employed, in an attempt to spare further challenging surgery in patients that had been already operated on recently.

Materials and Methods

During the period 2010-2017 a cohort of 6 patients were hospitalized for the treatment of iatrogenic fistulas which failed to resolve after conventional urine drainage. There were 6 calyceal fistulas (4 upper calix and 2 inferior calix) occurring after laparoscopic enucleoresection for pT1/PT2 renal cell carcinomas. Following documentation of urine leak through the drainage tube, the initial treatment had consisted in all in endoscopic placement of a double J stent and gravity drainage of the bladder via an indwelling Foley catheter, but after a median period of 7/10 days urine leak persisted. Under fluoroscopic guidance the double J stents were endoscopically removed and an open-end 8 F ureteral catheter was advanced over an hydrophilic guide wire in the upper calyx in 4 cases while was advance in the inferior calyx in 2 patient, placing the tip close to the fistula site. An amount of fibrin sealant (between 10 and 20 cc) (Tisseel, Baxter, Deerfield, IL, United States of America) was injected and the ureteral catheter was rapidly withdrawn. After a few minutes a new open-end ureteral catheter was advanced in the renal pelvis, and a control retrograde pyelography was performed. Finally a new double J or mono J ureteral stent was placed and the bladder was drained with a Foley catheter.

Results

In four cases there was immediate resolution of urine leak through the lumbar drainage, which was removed after 5 days. In two patient with persisting drainage, following evidence at uro-CT scan of contrast medium outside the kidney, we performed an flexible ureterorenoscopy to identify caliceal lesion and was repeated the procedure as described above with success

Discussions

Iatrogenic urinary tract fistulas may present as early complications following urological procedures, and their incidence is likely to increase due to the diffusion of laparoscopic and robotic surgery, where inadvertent thermal damage to the kidney by different energy sources may cause urine leak(1). Their conventional management consists in appropriate urinary drainage, which can be sufficient for tissue healing and fistula closure, provided that the amount of leakage is not excessive and the tissue damage is limited. The open fistula repair may be technically challenging and a decreased renal function is to be considered as the final result. In particular calyceal fistulas for adequate repair often require partial or total nephrectomy(1). In the early postoperative period therefore there is room for attempts at fistula closure using minimally invasive techniques, and fibrin sealants offer a possibility in this field. Until now there are few single case reports, which obviously had all a favorable outcome documenting a success rate of about 85%(2).

Conclusion

In our experience a fibrin sealant, originally proposed like emostatic agent, was also suitable for occlusion of urinary fistulas using endoscopic approaches. Since this treatment is well tolerated, without major complications and minimally invasive. In our opinion it is worthwhile to consider it relatively early when conventional urinary drainage measures fail

Reference

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10. URINARY UNDIVERSION: FEASIBLE SURGERY WITH LOW COMPLICATIONS TO IMPROVE QUALITY OF LIFE OR RENAL FUNCTION

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Objective

Urinary diversion has evolved immensely over the last half century. From the introduction of the ileal conduit in 1950 to the development of continent cutaneous diversion in the 1970s, urologists have witnessed a transformation culminating in the development of contemporary orthotopic reconstruction [1]. There are special cases where it is necessary to re-intervene on the urinary derivation, thus introducing the concept of urinary undiversion: packaging of a new urinary diversion in a patient already undergone urinary diversion [2]. The first to describe the un-diversion was Hardy Hendren in 1974, an american pediatric surgeon of the General Hospital and Department of Surgery of Boston. [3, 4]. Hendren performed un-diversion in pediatric patients affected by the following pathologies: Obstructive uropathy, aggravated by bacilluria and deterioration of renal function, Myelodiplasia, cause of neurogenic bladder; and bladder extrophy. The aim of this study is to assess early and late surgical complications as well as Quality of Life in patients treated with urinary undiversion.

Materials and Methods

We performed a retrospective analysis of our multicenter prospective maintained database. All procedures were performed by a single surgeon (G.M.) from 1994 to 2017. Median follow-up was 166 months (range 8-276 months). Complications were assessed by the Clavien Dindo classification with a time point of 30 days for early and late complications. Quality of Life before and after Surgery were compared with Mann-Whitney U test.

Results

At total of 44 patients (29 men and 15 women) with a median age of 62 (IQR 44-72) were identified. Indications for urinary undiversion were: urinary fistula (n=10, 22.7%), cancer recurrences (n=7, 15.9%), urinary incontinence (n=6, 13.6%), hydronefrosis with Chronic Kidney Disease (n=4 9%), recurrent urinary tracts infections (n=5 11.3%), miss adaptation to the stoma (n=10, 22.7%), stomal infection (n=1, 2.2%) and parastomal hernia (n=1, 2.2%). Overall, 27 (61.3%) patients had neobladder and were treated with incontinent urinary undiversion and eterotopic continent urinary undiversion in 23 (52.2%) and 4 (9%) cases, respectively. Eight (18.1%) patients had incontinent urinary diversion and were treated with neobladder and eterotopic continent undiversion in 5 (11.3%) and 3 (6.8%) cases, respectively. Five (11.3%) patients had ureterosigmoidostomy and were treated with eterotopic continent undiversion and incontinent urinary undiversion in 2 (4.5%) and 3 (6.8%) cases, respectively. One (2.2%) patient with ureterocutaneostomy was treated with eterotopic continent urinary undiversion. One (2.2%) patient with eterotopic continent urinary diversion was treated with incontinent urinary undiversion. Finally, in 2 (4.5%) patients the urinary diversion was relocated. In many of these cases it was possible to use the same intestinal segment of the previous urinary diversion in order to perform the urinary undiversion without any intestinal resection. At total of 9 (20.4%) complications occurred postoperatively and were classified as follows. Early complications Clavien I (fever $\geq 38,5$ °C) and Clavien IIIA (wound dehiscence) were observed in 3 (6.8%) and 2 (4,5%) patients, respectively. Regarding late complications, 4 (9%) patients developed a stricture of the ureteroileal anastomosis, requiring surgical reparation and were therefore classified as Clavien IIIB. We found a significant rise in quality of life in patients undergone urinary undiversion ($p \leq 0.05$).

Discussions

A systematic literature review was performed to identify articles that reported data on undiversion [5, 6, 7, 8, 9, 10, 11]. There are no systematic review or multiple cases articles. It must be considered a complex procedure that required experts surgeons with a large background.

Conclusion

Despite the surgical complexity of urinary undiversion, postoperative complications are relatively low compared to other major urological surgery like radical cystectomy. It's possible to perform this procedure in selected patients in order to increase quality of life and renal function.

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11. 30-WATT THULIUM VAPOENUCLEATION OF THE PROSTATE (THUVEP): LOW ENERGY AND BETTER FUNCTIONAL OUTCOMES

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Objective

Thulium laser vapo-enucleation of the prostate (THUVEP) is the latest of minimally invasive therapies available for the surgical treatment of lower urinary tract symptoms secondary to benign prostate obstruction (BPO)[1-2-3]. Modern laser therapy for BPO has advantages over TURP including decreased blood loss and minimal serum electrolyte changes resulting in fewer cardiovascular complications, decreased catheter time, shorter hospital stay and the ability to treat patients on anticoagulation [4-5]. Thulium laser performs excellent haemostasis and coagulation, presents effective resection and vaporization of prostate tissue [5]. In some cases THUVEP can cause irritative urinary symptoms [6]. It may be caused by the laser energy on the urethral sphincter. The aim of this study is to compare irritative urinary symptoms in patients with BPO undergone 70 or 30 watt THUVEP.

Materials and Methods

We retrospectively studied 106 patients with BPO from September 2015 to December 2016. All patients were aged 45 to 78 years and divided into 2 groups. Group 1 (n=53) underwent 70-Watt Thuvep and group 2 (n=53) 30-Watt Thuvep. Groups were similar for PSA range (0,5-3,5 ng/ml), prostate volume (42-150 g), preoperative urinary flow (5-10,2 ml/s) and post void residual volume (PVR) (35-68 ml). Patients were evaluated at 1, 3 and 6 months postoperative with International Prostate Symptom Score (IPSS), Overactive Bladder questionnaire short form (OAB-q SF) and International index of erectile function (IIEF).

Results

Mean operative time was 52 (IQR 42-73) min vs 70 (53-101) min in group 1 and 2, respectively. Mean laser time was 19 (13-35) min vs 32 (21-52) min. The rate of intraoperative prostate capsule perforation was less using 30-Watt than using 70-Watt Thuvep. Postoperative bleeding was less in 30-Watt Thuvep group. No differences in IPSS score and IIEF score were observed between the groups. After 1 month from treatment we found significant differences between group 1 and 2 in OAB-q symptom bother (24.43 ± 8.03 vs. 15.61 ± 4.25) and health-related QoL (51.07 ± 8.99 vs. 26.01 ± 5.26) scores ($P < .0001$ for all). No significant difference were observed in OAB-q SF score between the groups after 6-months from treatment. We found that none of the patients required re-operation for recurrent BPO.

Discussions

Laser enucleation techniques such as THUVEP have emerged over the last 10 years as viable treatment options for BPH based on evidence from prospective clinical trials [1 - 4 - 5]. The thulium laser is a new technology with several potential advantages over others lasers for the treatment of BPH such as favorable hemostatic properties, a relatively shallow depth of thermal damage [7] and the ability to perform hybrid procedures utilizing both vaporization and resection properties of the laser [8, 9]. A systematic literature review was performed to identify articles that reported data on the use of low voltage THUVEP. There are no articles speaking about this. Our early experience suggested 30 Watt ThuVEP is safe and effective and is better than high voltage THUVEP concerning irritative urinary symptoms, despite a longer operative time.

Conclusion

30-watt Thuvep is a safe and effective treatment for BPO. Patients undergone 30 Watt Thuvep had a better score in OAB-q SF. Using lower energy we found a significant difference in filling urinary symptoms in the first month after surgery.

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12. MANAGEMENT OF FAILED HYPOSPADIAS REPAIR IN ADULT

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Objective

Hypospadias is one of the most prevalent anomalies of the male genitalia. Primary hypospadias repair is very successful, but in patients (pts) underwent multiple surgeries throughout their life the result can be unsuccessful. Complications from failed hypospadias repairs have a significant impact on patients both psychologically and physically.

Materials and Methods

10 pts with failed hypospadias repair were enrolled in this preliminary study. The complications include : hypospadias recurrence with an ectopic meatus (2 pts), fistula (2 pts), urethral stricture including meatal stenosis (7 pts), and persistence of penile curvature (4 pts). Pts underwent correction in a single stage (8 pts) and in two-stage repair (2 pts). Second stage repair was performed at 6 month. In pts with urethral stenosis a graft of buccal mucosa graft was used. Pts with residual penile curvature was performed a corporoplasty with incision and plication of the albuginea.

Results

At 6 months follow-up 1 patient required surgery revision for fistula, while 2 pts needed urethral calibration. All pts underwent uroflowmetry with a Qmax >15 ml/s. All pts were satisfied with aesthetic result.

Discussions

Failed hypospadias repair is a challenging procedure and still represents a complex problem for reconstructive urologists [1]. When counseling patients with failed hypospadias it is important to discuss the expected outcome as repairs directed towards a terminally positioned meatus with a straight phallus may require multiple surgeries due to post-operative complications as well as the necessity of proceeding in a staged approach.

In this study we tried to fix the penis in one surgery when possible.

Conclusion

Failed hypospadias is a complex disorder that can affect pts psychologically too [2].

Pts often require multiple surgeries to achieve a satisfactory outcome and they have to be well informed that there are a multitude of reconstructive options for management of the various complications that they can have after surgery

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13. ONE-STAGE URETHROPLASTY USING BUCCAL MUCOSA GRAFT IN PATIENT WITH PENILE STRICTURE AND LICHEN SCLEROSUS

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Objective

Lichen sclerosus (LS) is a disease of unknown etiology that affects the genitals.

It is characterized by atrophy of the epidermis.

This disease is characterized by atrophy of the mucosa of the glans and prepuce leading to trauma during intercourse, difficulty in preputial mobility, erectile dysfunction, phimosis and paraphimosis and urethral stricture [1].

Materials and Methods

7 patients (pts) with LS and urethral stricture were enrolled for this study. Patient mean was age 54 years.

All of the patients underwent physical examination, uroflowmetry, retrograde and voiding urethrography in order to evaluate the stricture. The mean Qmax was 5 ml/sec. Mean stricture length was 4.2 cm. All pts underwent one-stage urethroplasty with buccal/labial mucosa graft.

A midline longitudinal, ventral incision was made starting from the urethral meatus. The penile urethra was exposed with minimal dissection. The urethra was opened along its ventral surface under the guidance of the guide wire, previously inserted. The urethra was spatulated up to normal caliber and pink urethral mucosa. The entire urethral plate affected by the LS was removed. Then the buccal mucosa graft was taken from the cheek and then it was spatulated in order to remove fatty tissues under the mucosa. Then it was sutured on the urethral plate with two lateral running sutures and many single stitches on the whole graft in 5.0 Vicryl suture. The neo-urethra was incised laterally and tubularized with 5.0 Vicryl suture.

The glans was reconstruct on the tubularized urethra. Dartos fascia and skin were closed. A sovrappubic catheter and a 10 Fr urethral stent were inserted and left for two weeks post-operatively. Pts were discharged from the clinic 2 days after surgery.

Results

At 1 year follow-up all pts underwent uroflowmetry in order to assess the voiding.

One patient needed a second surgery (Meatoplasty) in order to open the meatus.

Mean Qmax was 15 ml/sec. All pts were satisfied with the functional and aesthetic results of the surgery

Discussions

In pts with penile strictures caused by LS, the penis is fully involved in the disease : glans, meatus, skin, fibrotic dartos. For these

pts two-stage repair would be less risky and for this reason it is normally recommended the two-stage repair [2]. On the other hands pts, between the two stages, complain about the appearance of the penis that is open ventrally. Some pts don't make any physiotherapy post-operatively leading to scarring tissue on the urethral plate. The caliber of the neo-urethra should be wider than normal caliber due the fact that it will reduce after a while. At moment buccal mucosa graft represent the best tissue to replace the urethra.

Conclusion

Penile stricture with LS is a complex disease that needs to be treated with urethroplasty with buccal mucosa graft. This procedure in one-stage can give a good results just if the caliber of the neo-urethra is wide enough.

This procedure is the only technique that can treat LS and penile strictures.

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10 maggio 2018

11:00 - 12:30

sala Baglioni

Comunicazioni 2 - Genitalia

Moderatori: ENRICO CARACENI, MAURIZIO FEDELINI, TULLIO TORELLI

1. A REVIEW OF PERIOPERATIVE AND POSTOPERATIVE COMPLICATIONS OF PENILE PROSTHESIS SURGERY AT A SINGLE HIGH VOLUME CENTER

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Objective

Penile prosthesis implantation is usually considered the definitive treatment to restore sexual function to motivated man with erectile dysfunction not responsive to medical treatments.

At our institution, a total of 154 penile prosthesis implantation were performed between January 2011 and December 2016.

The aim of this study is to evaluate the perioperative and postoperative complications of our series of penile prosthesis surgery.

Materials and Methods

Intraoperative and postoperative complications were collected in a prospectively maintained database and analyzed. The two most common grading systems of surgical complications were used; the Satava system (1) for perioperative complications, and the modified Clavien-Dindo (CD) grading system (2) for the postoperative complications on the surgical complications of penile prosthesis surgery. We defined the intra operative complications as: corporeal crossover, corporeal perforation and bladder perforation. Postoperative complications were defined as: postoperative haematoma, infection, erosion, reservoir complications, connecting tubes complications, glandular problems and mechanical failure.

Results

All procedures were performed by a single surgical team with a penoscrotal approach. An antibiotic prophylaxis was somministrated to all patients and the general rules for disinfection during prosthetic surgery were carefully comply. 31 out of 154 patients underwent a heterotopic implant of reservoir into a potential space between the transversalis fascia and the rectus abdominis muscle (3). 9 patients underwent a malleable penile prosthesis and 129 patients a three component prosthesis implantation. In 7 patients an artificial urinary sphincter (AUS) and in 11 patients an urethral sling were synchronously implanted.

Table 1 reports intraoperative and post-operative complications according to Satava and CD systems, respectively (4).

Discussions

Among the intraoperative complications, the corporeal crossover usually will not cause important consequences, if properly recognized. According to Henry et al. (5) and others, the intraoperative cross-over management, both proximal and distal, can be based on placing a caliber 13 dilatator in the cavernous body not interested by crossover and the carefully re-dilatation of the corpora interested by the crossover. The authors suggest to dilate more lateral as possible, using the other dilator as a reference point.

Infection is one of the most dangerous complications that can occur within a wide range of time, from a few weeks to more than a year (6). The infection rate reduced in the last decades thanks to the antibiotic prophylaxis and the use of antibiotic-impregnated or hydrophilic-coated implants (7). Some categories of patients have a bigger risk of infection related complications like patients with spinal cord injuries, diabetes mellitus and history of urinary tract infection. In our series all patients that experienced an infection related complication had an history of type one diabetes mellitus.

The high global rate of complications (46.2%) was related to a 18.5% of patients that experience a not significative haematoma and a 4.5% of the patients that complain the loss of glandular erection. This last complication was considered a CD II grade complication (4).

Conclusion

Penile prosthetic surgery can be associated to important complications, in particular in some categories of patients or when the procedure is particularly challenging ("the ghost fibrosis") (8). In our opinion, surgeon experience and the right planning of the procedure can reduce the rate of complications during a penile prosthesis implantation.

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2. INTRAOPERATIVE AND POSTOPERATIVE OUTCOMES OF PENILE PROSTHESIS IMPLANTATIONS AFTER CISTOPROSTATECTOMY FOR MUSCLE-INVASIVE BLADDER CANCER: A MULTICENTRIC ANALYSIS OF 47 PATIENTS

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Objective

Penile prosthesis (PP) implantation represents a well-established treatment for medically refractory erectile dysfunction (ED) (1). Despite the clear evidences of the high incidence of the burden of ED after radical cystoprostatectomy (RCP), this issue is rarely addressed in the scientific literature.

The aim of this study was to report the outcomes of a multicentric series of patients underwent a PP implantation following RCP.

Materials and Methods

A multicentric database, involving 4 tertiary referral centers, was created. From December 2004 to September 2017 65 patients underwent a PP implantation for a medically refractory ED following a RCP for a muscle-invasive bladder cancer. Clinical records were retrospectively reviewed. 47 patients, presenting comprehensive intraoperative and postoperative information were enrolled in the study. Patients were confined in 2 main groups according to the urinary diversion: neobladder (A) or other diversions (B), including ileal conduit and ureterocutaneostomy. The intraoperative complications, the hospital stay, a postoperative haematoma scale and the postoperative complications were selected as variables for the surgical outcomes.

Results

14 patients (29.8%) were enrolled in group A, whereas the remainders were in group B. Only a minority of cases (8.5%) of RCP were carried out with minimally invasive techniques (robotic or laparoscopic). A chemotherapy in adjuvant settings was frequently reported, particularly in group B. Patients in group A resulted sharply younger than in group B ($p=0.0001$). Penile shaft deformities, either curvature or severe shortening, turned up to be rare issue, reported in only 15% of cases.

Despite the overall young age of patients, a vast minority of them was referred preoperatively to a sexual counselor. On the other hand, a consistent percentage (65.9%) of patients were referred to an early postoperative sexual counseling, with a median time of 12 months after surgery. Most of the patients (65.9%) started pde-5 inhibitors as a first line treatment and less than half of the them (44.7%) used, in salvage settings, intracavernous injections (ICI).

Surgical outcomes are listed in Table 1. The time elapsed between the RCP and the PP implant was extremely long, with a median of 38 months. Nevertheless, the median implant length resulted to be satisfactory (19 cm) and the need of a reduced diameter cylinder (CXR) was a rare event. Despite the previous pelvic surgery, most of the PP implanted were three-pieces. The spherical reservoir was the most used, compared to the low-profile (Conceal) (2). In most of the cases a safe placement of the reservoir in the extraperitoneal space through a second abdominal incision was the preferred surgeon's choice. However, the ectopic high-submuscular placement was found in up to 30% of cases in group A. Both intraoperative and postoperative complications resulted to be rare events (3). Finally, the multivariate statistical analysis (logistic regression) did not show any independent predictive risk factor for postoperative complications.

Discussions

From our analysis resulted that a small percentage of patients was referred to a pre-cistectomy psychosexual counselling while an important percentage of patients was referred to an early postoperative sexual counseling. This demonstrates how patients do not care about the sexual problem at the time of diagnosis of cancer, while approximately one year after the radical cystectomy they started a sexual counseling. Although traditional placement of reservoir into the space of Retzius is widely utilized and have been safely employed in complex cases, potential complications are described, including bladder perforation or erosion and vascular damages. However our multicentric analysis shows that the high submuscular alternative placement strategy was considered only in a small number of departments as a viable alternative to the traditional placement of reservoir. A low rate of intraoperative and postoperative complications was reported without no well-defined risk factors as predictor of complications. Maybe the big

surgical experience of the centers enrolled in this study helped to reach this good results.

Conclusion

Despite the high incidence of cases, ED after RCP is rarely addressed by urologists. PP implantation, despite the type of urinary diversion, represents a safe and satisfactory solution to address this issue.

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3. SIZE DOES MATTER: DOES THE PENILE PROSTHESIS IMPLANTATION REDUCE PENILE DIMENSIONS? A PROSPECTIVE STUDY

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Objective

Penile implant surgery is the most commonly preferred strategy for men with erectile dysfunction (ED) refractory to pharmacotherapy. Satisfaction rate reported for this kind of surgery is usually high (Furlow WL et al. >90%) (1). Shortening of the penis is a common cause of patient dissatisfaction after penile implant surgery (2). This dissatisfaction can be prevented by adequate counselling on the issue that he'll have "the erection" but not the erection "he had before".

Some patient requires more accurate information on length after surgery. In this case we suggest that it will be almost the same of stretched penis preoperatively. Are we telling the truth?

This prospective study aimed to evaluate the correlation between stretched penile length and flaccid girth measured before surgery and postoperative penile size during erection.

Materials and Methods

31 consecutive penile prosthesis implants were assessed from March 2016 to September 2017. Penile length and penile girth during standardised stretching were measured in operating room, and remeasured at the end of the surgery with maximally inflated implant.

All patients received AMS 700 LGX implant (Boston Scientific ©) and cylinder lengths were recorded. Patients with IPP (Induratio Penis Plastica) disease and with curvature > 20° were excluded, and so those with severe fibrosis. BMI (body mass index) and other co-morbidities (hypertension, diabetes mellitus, heart disease etc.) were assessed.

Results

The mean preimplant stretched length was 11.8 cm (D.S. + 0.6) and mean flaccid girth was 9.8 cm (+ 0.5). At the end of the surgery, with fully inflated cylinders, the length was 12.6 cm (+ 0.8) and the girth was 10.3 (+ 0.5). These results indicate a statistically significant (P value < 0.05) increase in both post-operative penile length and girth.

No correlations between post-operative outcomes and co-morbidities were found (P value > 0.05).

Discussions

Many men believe that length of the penis is the expression of their virility. Patients undergoing a radical prostatectomy have a higher risk of experiencing penile shortening compared with healthy population (3). The loss of penile size could negatively affect patient satisfaction rates and sexual quality of life following successful penile prosthetic implant surgery.

Masters et al. (4) reported that size of the penis has no real physiologic effect on female sexual satisfaction because the vagina adapts to fit the size of the penis.

Many studies suggested the idea that stretched penile length before surgery is a reliable indicator of post-operative penile length after implantation (5, 6).

Deveci et al. evaluated the stretched flaccid penile length of 56 patients who underwent penile prosthesis implant surgery pre-operatively and 6 months after the surgery. Although 40 out of 56 patients (72%) reported a subjective decrease in penile length, there was no significant difference in terms of objective stretched penile length before and after surgery (7).

Our study indicates that inflatable prosthesis does not decrease penile size compared to pre-operative evaluation, but also increase it for most patients. The gain does not appear related to co-morbidities such as diabetes mellitus, hypertension or BMI.

Recording pre-operative stretched penile length and agreeing it with the patient could be useful. Moreover, couple sex education before surgery may be a way to reduce unrealistic expectations. Patients should understand that penile implants may not restore the full length once achieved by natural erections.

Conclusion

Penile implant surgery does not decrease penile size compared to pre-operative "stretched penis". Diabetes mellitus, hypertension and other co-morbidities do not appear to be related with post-operative penile length. This issue can be discussed with patient before surgery with an easy to imagine prospective model, in order to improve satisfaction level of penile size postoperatively.

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4. PEYRONIE DISEASE LENGHTENING SURGICAL PROCEDURES: A RETROSPECTIVE, CRITICAL REVIEW BASED ON OUR PERSONAL EXPERIENCE IN THE LAST SEVEN YEARS

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Objective

We reviewed our personal data about Peyronie Disease (PD) lengthening procedures performed in our Unit from January 2010 to June 2017. We focus the attention only on the lengthening procedures for the correction of PD penile curvature in patients without Erectile Dysfunction (ED) at the time of diagnosis in respect of EAU guidelines(1). Particular we try to asset the efficacy to reduce the post-operative ED with the graft free Z plasty compared to classical albugineal incision and grafting procedure(2,3).

Materials and Methods

From January 2010 and June 2017 58 patients (pts) with symptomatic penile curvature due to PD underwent surgical lengthening procedures. Inclusion criteria for surgery comprise: penile curvature due to PD in stable phase(3) (≥ 6 months) and no ED (IIEF-5 >19 ; EHS >3 (4)). For 36 out of 58 pts classical H-shape plaque incision and graft was performed (30 cases using a collagen dermal matrix graft, 6 cases with saphenous vein graft) – Group A. For 22 out of 58 pts graft-free Z-plasty were performed (Group B). History (IIEF-5 and PDQ Scale Q2 to Q6(5)), physical examination (EHS) and curvature degree have been reported for each patients at the time of surgery as after 18 months at follow of control.

Results

At baseline median values of age, curvature degree, plaque diameter, IIEF-5, PDQ Scale has been: Group A 58.1 yrs; 62.3° dorsal; 23.1 points; 15.7 points. For group B: 59 yr; 66° dorsal; 22,8 points, 16.1 points. 56 up to 58 patients has been available for evaluation with follow up (FU) up to 18 months. Group A: complete resolution of the curvature has been jointed all cases but with a complete subjective satisfaction in 28/36 (77.7%) with median IIEF-5 20.1; median PDQ Scale 6.89; with stable ED in 23.6% of cases. Group B: complete resolution of the curvature has been jointed all cases with a complete subjective satisfaction with median IIEF-5 22,8; median PDQ Scale 3,33; non residual ED. Minor gland hypoaesthesia in all pts from 6 to 12 months from surgery.

Discussions

Our results seem to be effective in term of restoration of the penile shape with a complete functional straight of the penis in both groups. In terms of erection rigidity for sexual intercourse graft free procedure seems shows best outcome (all patients refers absence of ED with a post-operative mean IIEF-5 score of 22,8) in a range follow up observation over 18 months. We assay the subjective satisfaction of the patients using the PDQ Scale (from Q2 to Q6) score, that decrease from a mean value of 16,7 at baseline to 3,33 post-operative in Group B different from Group A where the decrease was low significant (from 15.7 to 6.89) and where stable ED was found 23% with IIEF-5 score about 20.1 versus 22.8 of Group B. For Group B pts. we submit three direct questions at the time of the 18 month follow up visit. All 22 patients eligible for the evaluation describe as full satisfaction (Q1, answer 1) after surgery and, at the same time, they answer “yes” at the Q2 and Q3 question. The answers at these last two questions represent the most important result that encourage us to continue in this surgical strategy for PD, because patients suggest that they would re-do the surgery and they would be suggest the same surgery to relations or friends meaning the complete real subjective satisfaction in terms of sexual behavior and sexual wellbeing.

Conclusion

Results obtained suggests that the length of the PD plaque, and the traslocation of the PD scar forces, on the short site of the penis with a graft free Z-plasty seems to be effectiveness to reduce penile curvature and avoid post-operative ED.

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5. CAVERNO-COMPUTED TOMOGRAPHY AS A MARKER OF POSSIBLE PERSISTENCE IN MEN TREATED FOR ERECTILE DYSFUNCTION RESULTING FROM VENOUS LEAKAGE. A SINGLE INSTITUTION EXPERIENCE

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Objective

To evaluate the relationship between the failure of the surgical correction of erectile dysfunction (ED) resulting from venous leakage and anomalous venous drainage highlighted by Caverno-Computed Tomography (CCT) in patients not responders to the maximum dosage of various phosphodiesterase type 5 inhibitors.

Materials and Methods

The study enrolled 58 consecutive patients (age 18-42 years old) suspected to have a venous leak from February 2014 to May 2017. Each patient gave his informed consent for the study and International Index of Erectile Function-Erectile Function Domain (IIEF-EF) questionnaire, medical history, physical examination, routine blood analysis, hormonal analysis were checked. Venous leak was firstly studied by penile dynamic doppler ultrasound and then confirmed by dynamic infusion cavernosometry (DIC) using flow-to-maintain measurement (FTM) as the defining parameter; FTM value upon 5 ml/minute defined a venous leak. To detect the venous leak site, we used a CCT that consisted in an intracavernous injection (ICI) of 1 mL of alprostadil (10 mcg), an ICI of 20-60 cc of diluted contrast media (1/3) using 20 cc of Ioprimide (300 mg/mL) and a spiral multidetector computer tomography acquisition and three dimensional volume rendering. Under local anesthesia with mepivacaine, we performed a short penile dorsal midline incision at the corona of the glans penis in order to ligate the superficial dorsal vein. The deep dorsal vein was distally ligated with absorbable suture and cavernosal veins were ligated as well. Conversely the proximal end was catheterized with a 20 Gauge steel needle after placing a tourniquet at the root of the penis and 3 ml aethoxysklerol foam 3% was injected for venoablation. Each patient was evaluated six months after surgery. Statistical analyses were conducted using SAS version 9.3 software (SAS Institute, Inc., NC). Mean values with standard deviations (\pm SD) were computed and reported for all items. Statistical significance was achieved if p-value was ≤ 0.05 (two-sides).

Results

No intraoperative complications were demonstrated. We just reported minor and transient side effects (hematoma and painful erections in 3 and 9 patients respectively). The CCT showed several patterns of penile venous drainage causing venous leak: 1) drainage through the deep vein (33 %), 2) drainage through the cavernous veins (71%), 3) drainage through the superficial vein (31%), 4) drainage through both superficial and deep vein (27%), 5) drainage through the crural veins (38 %). At 6-month follow-up 40 out of 58 patients (69%, group A) reported to have acceptable erections to allow a sexual intercourse without the use of any drugs or additional devices. 13 out of 58 patients (22,4 %, group B) reported to have erections sufficient to permit vaginal penetration with the use of low-moderate dose of PDE5i while 5 out of 58 patients (8,6%, group C) did not report any improvement. In group B and C, the CCT showed a prevalence of crural drainage through the internal pudendal vein and internal iliac vein in 14 out 18 patients (77,8%), while in 2 out 18 patients we observed a venous drainage through both the deep and superficial dorsal vein (11,1 %). In other 2 patients there was a leak through the cavernous veins. Preoperative IIEF-EF scores changed significantly at 6-month follow up ($p < 0,05$). Volumetric analysis of the penis showed a significant increase ($p < 0,05$) at 6-months follow up.

Discussions

The CCT is an accurate and low invasive way to study vasculogenic erectile dysfunction due to venous leakage (1,2). Thanks to its three-dimensional volume rendering, we are able to discover the site of venous drainage in order to program the best surgical approach to correct venous leakage in erectile dysfunction patients unresponsive to oral or intracavernous medical treatments. In our study we performed a modified technique of embolization of the deep dorsal vein achieving similar results to other studies (3). An interesting aspect was the fact that in unresponsive or low- responsive to surgery patients, a great percentage of them had a crural venous drainage through internal pudendal vein responsible of persistence or unsuccess due to the presence of collateral veins that cannot be reached by a single penile dorsal midline approach.

Conclusion

This study confirms that the presence of crural venous leakage, represents a prognostic negative factor for classical surgical correction of a venous vasculogenic ED, for which other and more invasive techniques should be advised (4,5).

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6. TESTOSTERONE REPLACEMENT THERAPY IMPROVES PEAK SYSTOLIC VELOCITY DURING THE DYNAMIC PENILE COLOR-DUPLEX ULTRASOUND IN PATIENTS WITH HYPOGONADISM

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Objective

Erectile dysfunction (ED) is the inability to achieve or maintain an erection sufficient for satisfactory sexual performance (1). The diagnosis of ED is based on anamnesis, objective exam, hormonal panel, dynamic penile color-duplex ultrasound (D-PCDU) with PGE1. Many studies have found that the restore of normal blood testosterone levels in men with hypogonadism is correlated with an improvement in the blood flow of the cavernous arteries.

The aim of our study was to evaluate the correlation between testosterone replacement therapy, Peak Systolic Velocity (PSV) and the caliber of penile arteries during the D-PCDU in men with Late Onset Hypogonadism (LOH).

Materials and Methods

We evaluated 35 consecutive LOH men (mean age 44,5 years) affected by Erectile Dysfunction that underwent Testosterone replacement therapy (TTh) with testosterone undecanoate 1000 mg/4mL (Nebid) from February 2013 to October 2016. Patients with Induratio Penis Plastica, PSA > 4 ng/ml, diabetes mellitus, hypertension, metabolic syndrome, more than 20 cigarettes/die, BMI > 35, obstructive sleep apnea syndrome (OSA) were excluded. At the baseline we collected data on demographic and anthropometric features (age, weight, height, BMI), lifestyle characteristics (smoke, alcohol), any comorbidities (hypertension, diabetes mellitus, etc.). Then the patients underwent to clinical evaluation (comprised general, genital, neurologic and urologic examination). If the patient respects inclusion criteria, IIEF-5 (International Index of Erectile Function-5) questionnaire and D-PCDU were performed. A dose of 10 mcg of alprostadil was used in all patients. IIEF-5 and D-PCDU were repeated after 12 months of replacement therapy. PSV and the caliber of penile arteries were evaluated during the D-PCDU.

Results

33 of 35 patients showed an increase of the PSV and a decrease of the diastolic velocity. 2 of 35 patients did not show an improvement in D-PCDU parameters after TTh. A statistically significant global differences in PSV and diastolic velocity before and after the TTh was reported (P-value < 0.05). All 35 patients showed an improvement of the IIEF-5 after therapy, with a statistically significant differences before and after the TTh (P-value < 0.05). No correlation between the caliber of basal penile arteries and testosterone was found (P-value > 0.05).

Discussions

Endogenous testosterone has long been recognized as being critical for the normal promotion of sexual desire; however, many studies also have suggested a potentially important role in many aspects of the erectile process. Testosterone deficiency is one of the most frequent cause of ED in younger men and can be one of many etiologic factors in older men (2). Most men have a lowering of their blood testosterone levels with age, but these levels usually are not low enough to induce ED. Preclinical studies have indicated that testosterone is important for preserving the veno-occlusive function and therefore erectile function (3). Clinical studies showed that TTh improved erectile function (4). Administration of TTh improves libido, sexual function and nocturnal penile tumescence (NPT) response in men with hypogonadism (5). Canguven et al. demonstrated that TTh improved also peak systolic velocity and significantly decreased the end diastolic velocity in men with LOH (6).

Our data suggest that TTh is correlated with an improvement of PSV during the D-PCDU in men with LOH. No correlation between the caliber of penile arteries and testosterone was found. In terms of erectile function, our findings, based on the IIEF-5 score, showed that TTh significantly improved erectile function.

Conclusion

Our study suggests that TTh is associated with an improvement of PSV during the D-PCDU in men with LOH. This therapy also improved erectile function as showed by IIEF-5 score. No correlation between the caliber of penile arteries and testosterone was found. Larger prospective studies with repeated measurements of D-PCDU, IIEF-5, and blood chemistry would be of great value.

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7. IS CORONA MORTIS AN ENEMY OF ADVANCE MALE SLING?

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Objective

The AdVance male sling (American Medical Systems, Minnetonka, MN, USA) is a synthetic transobturator sling, which is placed in a minimally invasive fashion, for the treatment of male stress urinary incontinence(SUI). Corona Mortis(CM), also known as sensational name crown of death, is an anatomical variant, an anastomosis between the obturator and the external iliac or inferior epigastric arteries or veins. Therefore, CM may be damaged, with conspicuous bleeding, during transobturator passage of the tape in stress-urinary incontinence correction. We decided to evaluate prospectively the incidence of postoperative pelvic

hematoma in men with radiological evidence of CM after the position of AdVance male sling.

Materials and Methods

In order to assess bleeding incidence due to CM injury, we started in January 2012 to enroll all men prospectively in this study who needed to be surgically treated their SUI and who had a pre-operative contrast-enhanced abdominal multidetector computed tomography(CT) performed because of other reasons. Indeed, CM can be easily identified on contrast-enhanced multidetector CT, using 1.25-mm thick images. 53 males underwent an AdVance male sling to correct SUI. Among them, 41 had a pre-operative abdominal CT performed. all CT scans were evaluated by a vascular radiologist. CM was identified in 11 men, bilaterally in three cases. Postoperative monitoring was performed every 12 hours for 24 hours with a red blood cells count, systemic blood pressure measurements, heart rate, reported nausea and/or pain, and lower abdominal examination in order to palpate any mass. An abdominal ultrasonography was performed in all cases before hospital discharge by a radiologist, who was blinded of the study outcomes. Pelvic hematoma was defined as a large collection of fluid in a cul de sac.

Results

All procedures were performed by single experienced pelvic surgeon. Surgery ended in all cases with a cystoscopy to rule out bladder injury, positioning a 16-Fr indwelling urethral catheter and a perineal packing. Mean operative time was 58.5 ± 7.8 minutes. No major bleeding during surgery, nor rectal and bladder injuries were seen. Mean drop in postoperative haemoglobin was 1.4 ± 0.9 g/dl. No mass was palpated in any patient. All men underwent an abdominal ultrasonography and no pelvic haematoma was identified. Catheter and perineal packing were removed the morning after surgery. Only one patient, who had an acute urinary retention. All patients were discharged 24 hours after surgery

Discussions

In our study, we found no major bleeding during surgery, no postoperatively (such as large pelvic hematoma) in 11 men with CM. The transobturator way avoids major vascular structures, such as obturator vessels. The anatomical structures crossed by the tapes are muscles and fascia, as very well demonstrated. Furthermore, it is clear from all female cadaver studies analyzed(1) that CM lies in a relative "long" distance far from transobturator needle passage, always situated above the levator ani muscle, and is therefore not concerned by the normal course of the TO needle, making transobturator surgery safe regarding serious and life-threatening bleeding. In this study, no serious bleeding complications were encountered; transobturator surgery in SUI correction and in POP repair seems to be a safe way in the presence of the dreaded CM. However, our study represents a small series and further studies, including comparative, are needed to confirm these preliminary findings

Conclusion

Transobturator surgery seems to be a safe way in the presence of the corona mortis. However, further studies are needed to confirm these preliminary findings.

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8. ORGAN-SPARING SURGERY IN TESTICULAR SEX CORD-STROMAL TUMORS: RESULTS OF A LITTLE SERIES E.

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Objective

We present a small series of 11 consecutive patients with testicular sex-cord stromal tumors (TSCST), with the intent to evaluate the possibility to standardize the surgical treatment.

Materials and Methods

Between 2005 and 2016 a TSCST was diagnosed in 11 patients at our department. The age ranged from 14 to 83 years. The blood screening with alpha-fetoprotein (alfa-FP), human chorionic gonadotropin (HCG) and lactate dehydrogenase (LDH) was assessed preoperative in all patients. All patients underwent inguinal access to the testis. During the operation frozen sections were request before to choose the definitive surgical strategy and a TSS was performed always in case of TSCST, waiting for the definitive histology, before to perform a radical orchidectomy. A thoracic and abdominal computed tomography was performed after the surgery. The follow-up was scheduled according with the European Association of Urology guide-lines for testicular tumors.

Results

All lesions were intraparenchymal and detected in ultrasound. No patient presented gynecomastia. Alpha-FP, HCG and LDH were negative in all patients. The intra-operative histology showed a TSCST in 10 patients, which were treated with TSS. In 1 patient was performed an orchiectomy, because the frozen section suspected a seminoma but the definitive histology showed a TSCST. The tumor-size ranged from 7 to 40 mm. There was no evidence of angioinvasion, margin infiltration or necrosis in the definitive histology. The mitosis-index was low in all patients (<1%). All postoperative courses were uneventful and the patients were discharged one day after the operation without complications. The computed tomography showed absence of lymph node enlargement or distant metastases in all patients. Follow-up ranged from 10 to 108 months (mean 43.8 months), every 6 months for 5 years and then every year. All patient are free from disease and alive except one, who died after 108 months for other reasons.

Discussions

Testicular sex-cord stromal tumors (TSCST) arise from nongerminal cell lines of the male testis and represent 3-5% of all testicular tumors (1): the most common subtype is represented from Leydig cells tumors (75-80%) but this group of tumors includes also Sertoli and Granulosa Cell tumors, mixed and undifferentiated tumors, thecomas and fibromas. They can occur at any age with a range from 12 to 76 years in previous reports. The most common clinical presentation is a palpable testicular mass. Gynecomastia, erectile dysfunction or decreased libido are reported in one third of patients. The great majority of these tumors show a good clinical outcome but a malignant behavior has been reported in about 10% of all cases (2, 3). Because of his

low incidence and the lack of data with prospective studies, their management remain controversial: the guide-lines recommend an organ-sparing procedure in every small ultrasound-detected, non palpable intraparenchymal lesion to obtain a histological diagnosis and, in case of malignancy, to perform a delayed orchiectomy but they don't give a cut-off for the tumor size (3, 4). The potential malignancy and the difficulty to individuate the unfavourable cases can be an element for urologists to perform a radical surgery and the testis-sparing surgery (TSS) can remain only an option (5). Our small prospective series shows, that a TSS could be safely performed in case of TSCST by frozen sections, when the tumor size doesn't exceed 4 cm and when the lesion is easy to resect, leaving sufficient testicular parenchyma, with a very low risk to perform a delayed radical surgery. In presence of one or more pathologic risk factors in the definitive histology a radical surgery should always be considered. Although the good prognosis of these tumors we remark the need of a regular follow up.

Conclusion

By sex cord-stromal tumors on frozen sections a TSS is safe and could be performed, waiting for the definitive histology, with a very low incidence of a delayed orchiectomy.

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9. GRANULOSA CELL-TUMOR OF THE TESTIS: A CASE REPORT OF A VERY RARE TUMOR AND REVISION OF THE LITERATURE

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Objective

To present a very rare case of a patient with an adult type of GCT of the testis, treated with testis sparing surgery.

Materials and Methods

We describe a case of a 32 years old patient, who was admitted to our department with suspicion of tumor in the left testis. The ultrasonography showed a 15 mm hypo-echoic, vascularised lesion in the upper pole of the left testis. The patient had no history of cryptorchidism and his past medical history was not significant, including only a spontaneous pneumothorax, when he was 18 years old. The patient denied decreased libido or erectile dysfunction in the months before. Alpha-fetoprotein (alfa-FP), human chorionic gonadotropin (HCG) and lactate dehydrogenase (LDH) were normal. During the operation a frozen section was request as usual in our department, before to perform a radical treatment. The lesion was little, intra-parenchymal and simple to remove, without infiltration of the surrounding tissue. The pathologist suspected a GCT and the surgeon decided to perform a testis sparing surgery, waiting for the definitive histology.

Results

The postoperative course was uneventful and the patient was released from the hospital the day after the operation without complications. The definitive histology confirmed the previous report of adult-type GCT; the lesion measured 1.5 cm and showed to be not infiltrating. There was no evidence of angio-invasion or necrosis. The tumor was composed of clusters of cells with scanty cytoplasm in a predominantly micro-follicular pattern; very few mitosis could be seen. The immunohistochemical study showed positivity for calretinin, inhibin, CD-99 and beta-catenin while chromogranin, cytokeratin and melan-A were negative. A computed tomography showed absence of lymph node enlargement or distant metastases. The patient underwent regular follow up without any other surgery: an ultrasound of the testicles was done every 3 months; 6 months after surgery an abdominal ultrasound and a chest X-ray were performed and after one year the patient has well done and shows no signs of residual disease on ultrasound and computed tomography.

Discussions

Granulosa cell tumors (GCT) of the testis belong to the sex-cord stromal tumors and represent 4-5% of all testicular tumors (1). They were described for the first time in 1952 and they can be divided in two distinct groups, the juvenile type and the adult type. Although the juvenile-type represents only 1-4% of pre-pubertal testicular tumors, it's the most common testis neoplasm in the first 6 months of life (2). The adult type is instead extremely rare and occurs at any age after puberty with only a limited number of reported cases to date: after a review of the literature we have found only 51 published cases, mostly isolated as case report (1, 2, 3). Unlike the juvenile type, which is typically benign, 20-25% of the adult type has been reported to be malignant with a metastatic potential even after 10 years: the retroperitoneal lymph nodes are the most common metastatic regions but liver, lung and bone metastases have been also described. Gynecomastia, erectile dysfunction and decreased libido may be present in 20-25% of the cases, due to hormonal or chromosomal abnormalities. Because of his low incidence and the lack of data, the prognosis is not really known and consequently it's almost difficult to decide what surgery to perform and if a radical treatment is really needed. Testis-sparing surgery could be offer in selected cases by small, intra-parenchymal lesions, if frozen sections are suspicious for a GCT, waiting for the definitive histologic diagnosis: by angio-invasion, necrosis, infiltrating margins and severe nuclear atypia or elevated mitotic count (4) a delayed radical orchiectomy could be performed although no cut-off for the tumor size is offered in the guide lines. A personalized follow-up is required.

Conclusion

The adult-type GCT is a rare entity, which can be malignant in 20-25% of the patients. The reported case showed, that testis

sparing surgery is safe in very selected cases, if frozen sections are available and if the definitive histology shows no risk factors.

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10. CASE REPORT :SYNCHRONOUS BILATERAL SEMINOMA

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Objective

We want present a case of synchronous bilateral seminoma . Bilateral testicular neoplasia is a rare situation normally treated with bilateral radical orchiectomy which has important consequences in men, renders the patient infertile and dependent on exogenous androgens (1.3).

Materials and Methods

Patient (pz) 42 years old, with normal levels of testosterone, he had performed the seed conservation. At other sites, at the target examination of bilateral ultrasonography tumefaction: multiple heterogeneous bilateral linfonodes It is performed pet / tac, then it is performed bilateral orchifuniculectomy by inguinal way (sett15), fifteen days after performed control pet, then tac T / B aimed at the verification of some highlighted and persistent lymph node areas to the previous radiological examination. Two months after, cycle of chemotherapy with carboplatin is performed Follow-up performed with half-yearly markers evaluation, pet annual alternating with tac torax without contrast and annual addominal and inguinal ultrasound

Results

In the pre-operative pet (18 f fdg), pathological hyperaccumulation is set up at the level of the didyms, more modest metabolic activity at the lymphonodal level of the external right iliac, para-aortic and retro-angolomandibular left.

Bilateral orchifuniculectomy: extemporaneous examination compatible with germline neoplasia in both sites, on the left, seminoma, pT2 Nx

Invasion rete testis and angiovascular invasion, absent necrosis, present intratubular neoplasia, funicular resection margin and vaginal tumor-free vaginal tunic. Nodule larger left size 3 cm.

Right. major nodule, 4 cm with histological examination superimposable to the contralateral. Postoperative pet detects persistence of lymph node areas of hyperaccumulation, which are then reactive. Actually the follow up and maintenance with testosterone performed by us is negative

Discussions

Testicular germinative neoplasia happens predominantly in 15 to 45-year old men. On 2-4 % of the cases there is bilateral in seminomas (1-2) Many studies have been done partial orchiectomy to have the patient got infertile, but without residual disease or need for androgenic supplements, but follow criteria for selection of patients.(1.2.4.5)

Conclusion

Bilateral radical orchiectomy still remains as standard treatment for bilateral testicular neoplasia.

Testis-sparing surgery may be indicated in case of benign tumours, incidentally discovered non palpable tumours, but no it doesn't the case . the dimension is larger. (1.5)

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11. SEX EAT AND DRINK: URO-ANDROLOGICAL HEALTH CARE STAFF ANSWERING AN INFORMATIVE QUESTIONNAIRE

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Objective

Food and sex are strictly connected under the psychological and physiological aspects as they are both sources of pleasure and gratification Communication in sexology is also a hard matter because the therapist must listen to himself and inform, cure the patient and in the same time take care of both of them AIM of the questionnaire is the evaluation of the sexual status, feeling about sex versus feeling about eating and drinking of uro-andrological health care staff in order to point out the relevance of sexual matters in conditioning eating feeling an behaviour (1-2-3)

Materials and Methods

A simple 10 items questionnaire was submitted during a professional uroandrological training course about Sexology and eating habits held on october 2017

Items:

- 1) Do you feel you have a proper diet?
- 2) Do You think you are overweight
- 3) Do You think you are underweight
- 4) Do you think your diet is affected by "dietary habits"
- 5) Have you any trouble talking about sex ?
- 6) Are there sexological questions to which do you like to have answers?
- 7) Do you feel to have "sexological problems" in this moment ?
- 8) Do your sexual sex problems affect your way of drinking?
- 9) Do your sexual sex problems affect your way of eating ?
- 10) Does it exist the "gastronomic orgasm"?

Results

Questionnaire distribution : 85 in participants in professional uroandrological course and 12 in eating and sexological course 86,6 % of the participants declared NO "sexological problems", and NO trouble talking about sex, and so their sexual problems (if exist...) DO NOT affect the way of drinking (91. 6%) and eating (89,6%)BUT 56.7 % YES had to ask some sexological questions. Furthermore 64.9 % of the participants feel to have a proper diet, but 43,2 % think to be overweight (statistically significant $p < 0.01$)

Discussions

Discrepancy revealed by an accurate analysis of the answers underlines the difficulties in speaking about sex and feeding and the importance of treating sexual matters in uroandrological environment and in the same time a kind of personal psychological involvement by health care staff both in sexual and in alimentary eating / drinking behaviour

Conclusion

Uro-andrological health care staff need more sexological informations together with a basical sexological training

Reference

1. Biopsychosocial aspects of Prostate cancer . EJS Kunkel JR Bakker RE Myers, O Oyesanmi, LG Gomella Psychosomatics 2000; 41:85-94
2. Longitudinal effects of social support and adaptive coping on the emotional well-being of survivors of Localized Prostate Cancer RES Zhou, FJ Penedo et al J Support Oncol 2010; 8 (5):196-201
3. Perceptions and opinions of men and women on a man's sexual confidence and its relationship to ED: results of the European Sexual Confidence Survey. San Martín C1, Simonelli C, Sønksen J, Schnetzler G, Patel S. Int J Impot Res. 2012 Nov-Dec;24(6):234-41. doi: 10.1038/ijir.2012.23. Epub 2012 Jun 21.

12. COMUNI...CARE IN SEXOLOGY: BIDIRECTIONAL ISSUES BY INFORMATIVE QUESTIONNAIRE TO HEALTH CARE STAFF

M. Diambrini¹, R. Renzi², G. Diambrini³, W. Giannubilo ¹, G. Sortino¹, M. Di Biase ¹, G. Ferrini², V. Ferrara¹

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³ Università di Ancona, Nurse Degree Course (Ancona)

Objective

Communication in sexology is always a hard matter because the therapist must listen to and inform the patient and in the same time take care of him : so that the concept of "communication" have to change in "communi-care ". Uroandrological , Obstetric-Gynecological departments and ambulatory outpatients represent a challenge in sexology both in case of anamnesis collection , explanation of side effects and complications of drugs, surgery and in case of physical exam or nursing . (1,2,3)

Materials and Methods

A simple 8 items questionnaire was submitted :

a) in 10 Obstetric – Gynecological Departments inside Marche country – Italy from July to October 2017

b) During a professional uroandrological training course about "communi-care " held on october 2016. AIM of the questionnaire is the evaluation of the sexual status and feeling about sex of the health care staff and the relevance of sexual matters and personal problems in approaching patients

Items:

- 1) Do you think that sex is important in your life?
- 2) Do you feel to have "sexological problems" in this moment ?
- 3) Are there sexological questions to which do you like to have answers?
- 4) Do you consult a specialist to deepen any curiosity or sexual problems?
- 5) Have you any trouble talking about sex ?
- 6) Have you any trouble talking about sex with your partner?
- 7) Do your personal sexological problems affect your professional activities ?
- 8) Do your personal sexological problems affect your dialogue with patients?

Results

questionnaire distribution : a) 414 in Obstetric– Gynecological Departments

b) 83 in participants in professional uroandrological course

questionnaire returned a) 221/414 (53 %) b) 76/83 (91.5 %) ; total returned 297/497 (59,7 %)

a) 10 males , 211 female: 83 obstetric nurses, 34 obstetric nurses in training, 49 nurses, 27 gynecologists, 28 other professional

workers aged 19- 63 years

- item 1 : yes 193/221 (87 %)
- item 2 : no 207/221 (93.6 %)
- item 3: yes 63/221 (28,5 %)
- item 4 : no 114/221 (51.5 %)
- item 5 : no 205/221 (92.7 %)
- item 6 : no 211/221 (95.4 %)
- item 7 : no 213/221 (96.3 %)
- item 8 : no 216/221 (97.7 %)

b) 14 males , 52 females ,10 not declared sex; 13 medical doctors, 41 nurses, 4 psychologists , 5 other professional workers 13 not declared profession, aged 23 -64 years

- item 1 : yes 72/76 (94.7 %)
- item 2 : no 60/76 (78,9 %)
- item 3: yes 53/76 (69.7 %)
- item 4 : no 42/76 (55,2 %)
- item 5 : no 63/76 (82,8 %)
- item 6 : no 68/76 (89,4 %)
- item 7 : no 73/76 (96 %)
- item 8 : no 75/76 (98,6 %)

Total a) + b) 297 questionnaires 24 males , 263 female 10 not declared sex : 83 obstetric nurses, 34 obstetric nurses in training, 90 nurses, 27 gynecologists, 13 medical doctors , 4 psychologists 33 other professional workers 13 not declared profession aged 19- 64 years

Discussions

Discussion 89,8 % of the participants declared NO "sexological problems", BUT 30,9 % YES had to ask some sexological questions and a statistically significant difference ($p < 0,00001$) was noted between the two groups : 28 % of Gynecological Departments versus 69,7 % of the uroandrogical training course

Females seems to have more sexological problems (25 % versus 14.3% of the male) and have more questions to be answered (77 % versus 57.1 % of the male)

Furthermore females declared a bit more trouble talking about sex (18.8 % versus 7.2% of the male)

100 % of the male declared NO trouble in talking about sex either with the partner or with patients

Only 1 male and 1 female declared that personal sexological problems affected professional activity and the dialogue with the patient respectively : the others showed very clear and strong positions thinking and feeling about communication in sex

Perhaps this strong unanimoos response may hide any psychological resistances or underlying problems?

Conclusion

Discrepancy revealed by an accurate analysis of the answers underlines the importance of treating sexual matters in uroandrogical environment and in the same time a kind of personal psychological involvement by health care staff: so sexological informations is needed togheter with a basical sexological training

Reference

1. Biopsychosocial aspects of Prostate cancer . EJS Kunkel JR Bakker RE Myers, O Oyesanmi, LG Gomella Psychosomatics 2000; 41:85-94
2. Longitudinal effects of social support and adaptive coping on the emotional well-being of survivors of Localized Prostate Cancer RES Zhou, FJ Penedo et al J Support Oncol 2010; 8 (5):196-201
3. Perceptions and opinions of men and women on a man's sexual confidence and its relationship to ED: results of the European Sexual Confidence Survey. San Martín C1, Simonelli C, Sønksen J, Schnetzler G, Patel S. Int J Impot Res. 2012 Nov-Dec;24(6):234-41. doi: 10.1038/ijir.2012.23. Epub 2012 Jun 21.

11 maggio 2018

15:00 - 16:30

sala Visconti

Video 2 - E' Tempo di Ricostruire

Moderatori: FRANCESCO FRANCESCA, VINCENZO FERRARA, DAVOR TOMIC

1. TRANSNEPHROSTOMIC ICG GUIDED ROBOTIC URERETAL REIMPLANTATION FOR URETEROILEAL STRICTURES AFTER ROBOTIC CYSTECTOMY AND NEOBLADDER: STEP BY STEP TECHNIQUE

G. Simone¹, G. Tuderti¹, L. Misuraca¹, M. Ferriero¹, F. Minisola¹, G. Vallati², S. Guaglianone¹, M. Gallucci¹

¹ Istituto Nazionale Tumori "Regina Elena", Unità di Urologia (Roma)

² Istituto Nazionale Tumori "Regina Elena", Unità di Radiologia (Roma)

INTRODUCTION: In this video we describe our initial experience with robotic ureteral reimplantation for uretero-enteric anastomotic strictures in patients previously treated with robot assisted radical cystectomy and intracorporeal neobladders (RARC-N) with the use of near infrared fluorescence (NIRF) imaging after transnephrostomic injection of indocyanine green (ICG).

METHODS: From April 2015 to October 2017, 9 consecutive patients underwent robotic ureteral reimplantation in one tertiary referral center. All patients previously underwent RARC-N with the same standardized technique.

All patients previously underwent percutaneous nephrostomy and at least one antegrade stenting and stricture dilatation attempt. This was a case of a 64 year old male, with a 2.5 centimeters left ureteral stricture, who underwent RARC-N 10 months ago.

As shown in the video, transnephrostomic injection of ICG was performed to identify the lumbar ureter.

Intravenous ICG was injected and allowed to easily identify the left iliac artery.

RESULTS: Median time from RARC to uretero-anastomotic stricture diagnosis was 5mo (IQR2-6). Median stricture length was 1,5 cm (IQR 1-2). Median operative time was 140 minutes (IQR 81-155) and median length of stay was 5 days (IQR 3-9).

All cases were completed robotically.

CONCLUSIONS: Near infrared fluorescence imaging provides an easy guide to identify and progressively dissect the ureter.

2. REIMPIANTO URETERALE BILATERALE VIDEOLAPAROSCOPICO PER LA GESTIONE DI IDRONEFROSIS OSTRUTTIVA IATROGENA

W. Giannubilo¹, M. Di Biase¹, G. Sortino¹, M. Diambrini¹, A. Marconi¹, V. Ferrara¹

¹ Ospedale Carlo Urbani (Jesi)

Il presente video mostrerà la gestione chirurgica di una complicanza in un paziente di anni 72 sottoposto a prostatectomia radicale videolaparoscopica nerve sparing per un tumore prostatico 3+3. In seguito all'intervento il paziente ha manifestato insufficienza renale acuta (creatinina 7.2 mg/dl) con idronefrosi bilaterale ed anuria per il quale è stato sottoposto a posizionamento di nefrostomia bilaterale e tentativo infruttuoso di stentaggio anterogrado a causa della presenza di stenosi dell'uretere terminale bilateralmente. Pertanto il paziente è stato sottoposto ad intervento di reimpianto ureterale bilaterale videolaparoscopico con approccio trans peritoneale, sono stati isolati gli ureteri bilateralmente sino al tratto stenotico e sono stati sezionati e spatulati. In seguito è stata effettuata una breccia sulla parete vescicale anteriore ed è stato effettuato un reimpianto diretto degli ureteri in sede ortotopica a livello del trigono vescicale, anastomosi effettuata con Vicryl 3-0. Sono stati infine posizionati 2 tutori ureterali tenuti in sede per circa un mese a protezione delle anastomosi.

3. URETEROCISTONEOSTOMIA SINISTRA LAPAROSCOPICA IN NEOVESCICA ILEALE ORTOTOPICA

A. Polara¹, R. Bertoloni¹, G. Grosso¹

¹ Ospedale Pederzoli (Peschiera del Garda)

Il video descrive il trattamento laparoscopico di una stenosi flogistica dell'uretere pelvico sinistro, in paziente maschio di anni 70 sottoposto un anno prima a cistectomia radicale open, con neovescica ileale ortotopica.

Vengono esposti: i quadri TC e contrastografici,
l'adesiolisi di aderenze parietali intestinali,
l'identificazione dell'uretere sinistro,
l'identificazione e preparazione della neovescica ileale,
la sezione e lo spatulamento del tratto stenotico dell'uretere sinistro,
l'incisione di lembo del reservoir,
il reimpianto ureterale diretto,
la ritubularizzazione del lembo.

La laparoscopia consente, in mani esperte, di trattare complicanze di chirurgia maggiore open, garantendo una ridotta morbidità. Nel caso trattato, sebbene la soluzione di continuo dell'uretere fosse di pochi cm, è stato adottato un reimpianto diretto per la scarsa possibilità di mobilizzare il reservoir intestinale ed il relativo meso.

4. IDRONEFROSI DA FIBROSI RETROPERITONEALE, GESTIONE LAPAROSCOPICA

W. Giannubilo¹, A. Marconi¹, G. Sortino¹, M. Diambrini¹, M. Di Biase¹, V. Ferrara¹

¹ Ospedale Carlo Urbani (Jesi)

Il presente video mostrerà la gestione chirurgica di un paziente di anni 76, inviato dal Pronto Soccorso per insufficienza renale acuta ed idronefrosi bilaterale. Il paziente è stato pertanto sottoposto a posizionamento di stent ureterali bilaterali in urgenza e successivamente, risolta l'insufficienza renale ha effettuato URO-TC che ha evidenziato la presenza di tessuto solido retroperitoneale, scarsamente vascolarizzato, che tendeva a circondare "a manicotto" l'aorta, l'emergenza dei principali vasi splanchnici ed entrambi gli ureteri.

Pertanto il paziente è stato sottoposto ad intervento chirurgico in 2 tempi di peritonealizzazione degli ureteri. Per l'uretere dx il paziente è stato posizionato in decubito laterale sin per accesso transperitoneale, con posizionamento dell'ottica in sede periombelicale e delle operative in sede sottocostale ed inguinale dx. E' stato poi isolato l'uretere dx e sbrigliato dalle aderenze sino al tratto iuxta-vescicale ed è stato posizionato in sede intraperitoneale ed è stato chiuso il peritoneo a punti staccati. L'uretere sin è stato trattato in un secondo tempo con tecnica analoga e speculare.

5. NEW TECHNOLOGIES FOR OLD PROCEDURES WHEN FIREFLY TECHNOLOGIE IMPROVES ROBOTIC BLADDER DIVERTICULECTOMY

F. Vedovo¹, B. De Concilio², G. Zeccolini², A.. Celia²

¹ Azienda Sanitaria Universitaria Integrata di Trieste (Trieste)

² Ospedale San Bassiano, S.C. Urologia (Bassano del Grappa)

Scopo del Lavoro: The video shows the peculiar advantage of using Firefly Fluorescence Imaging da Vinci System during bladder diverticula detection and dissection.

Materiali e metodi: Patient is placed in the lithotomic position and 30° Trendelenburg. Supraumbilical camera trocar is inserted. We use a four-arm robotic approach and a 5 to 6 ports placements. Pneumoperitoneum is established at 12 Hg mm. The bladder is accessed via a transperitoneal route. We perform a flexible cystoscopy with the Firefly Fluorescence Imaging System on for the diverticulum detection. The peritoneum over the bladder is then incised to expose the diverticulum. We use this near-infrared technology also as a guide in the diverticulum dissection. Using sharp and blunt dissection, the diverticulum is resected to its neck. Completion of diverticulectomy and hydraulic tightness test. Drainage placement in the Retzius space and peritoneum reconstruction.

Results: Several approaches have been described for intra-operative diverticulum identification and dissections. We developed a technique in which transperitoneal bladder diverticulectomy is performed under the Firefly guidance that provide real-time, image-guided identification of key anatomical landmarks.

Conclusions: In our experience, intra-operative use of Firefly makes identification and dissection of the diverticulum rapid, safe and effective with no additional cost, even in disadvantageous anatomic conditions such as lateral-posterior diverticula.

6. ENDOSCOPIC TREATMENT OF VESICoureTERAL REFLUX IN ADULT PATIENTS: SUSPENSION TECHNIQUE WITH VANTRIS

A. Benelli¹, V. Varca¹, F. Peraldo¹, M. Rosso¹, A. Gregori¹

¹ ASST-Rhodense, Dipartimento di Urologia (Garbagnate, Milan)

The aim of this video is to describe an injection technique with polyacrylate polyalcohol copolymer (PPC, Vantris, Promedon, Cordoba, Argentina) using a guidewire to suspend the anterior wall of the ureter and show our results comparing them with the classic STING technique first described by O'Donnell and Kirsh.

Between 2013 and 2017 we performed 19 endoscopic bulking procedures in women with vesicoureteral reflux. We retrospectively

compared the use of the classic STING technique and the suspension technique in terms of success rate. The clinical case describes the treatment of VUR in a 48 years old woman with bilateral endoscopic injection of Vantris. 7 patients underwent the classic STING approach, 12 the suspension. Table 1 reports the results in terms of number of injections needed to achieve the correction of VUR. Success rate after 1 injection is 91.6% in the suspension group and 57.1% in the STING group.

This technique improves the efficacy of endoscopic treatment of VUR. Our preliminary experience with a small population and further studies with this technique must be encouraged to improve the correct and otherwise difficult treatment of VUR in adult patients.

Table 1

Technique	Correction after 1 injection	Correction after 2 injections	Failure	Tot.
STING	14	2	1	17
SUSPENSION	11	1	0	12

7. URETROPLASTICA POSTERIORE PER VIA PERINEALE COMBINATA CON ACCESSO

ENDOSCOPICO SOVRAPUBICO E. Palminteri¹, G. Cucchiareale¹, E. Berdondini¹, A. Battaglia¹

¹ Humanitas Cellini (Torino)

Il Video mostra l'Uretroplastica Posteriore utilizzando un accesso chirurgico perineale progressivo combinato con un accesso endoscopico sovrappubico.

Paziente con rottura dell'uretra posteriore dopo trauma pelvico.

Attraverso una incisione perineale l'uretra bulbare viene isolata e staccata dai corpi cavernosi. La sezione del Centro Tendineo Perineale consente la mobilizzazione circonferenziale dell'uretra bulbare prossimale e membranosa. La separazione mediana dei corpi cavernosi facilita l'accesso all'apice prostatico. Queste manovre consentono l'isolamento del blocco uretra bulbare prossimale-uretra membranosa-apice prostatico. L'uretra membranosa viene sezionata quanto più vicino possibile all'apice prostatico.

Tramite l'accesso sovrappubico il cistoscopio è inserito in vescica e, attraverso il collo vescicale, nell'uretra prostatica. Il perineo è transilluminato dall'endoscopia ed il chirurgo, seguendo la luce, incide l'apice prostatico e identifica il lume uretrale prossimale. Dopo la resezione dei tessuti cicatriziali, i due monconi uretrali sono spatolati e viene confezionata l'anastomosi bulbo-prostatica. Nell'uretrotroplastica posteriore l'approccio perineale progressivo consente un soddisfacente accesso all'apice prostatico.

L'accesso endoscopico sovrappubico è una manovra meno aggressiva rispetto all'impiego alla cieca del beniquè poiché:

1-facilita il ritrovamento per via perineale del lume uretrale prostatico,

2-preserva la continenza urinaria poiché riduce il rischio di danneggiamento del collo vescicale che è l'unico sfintere residuo dopo la compromissione dello sfintere distale dovuta al trauma.

8. ALBUGINEAL GRAFTING AND PENILE IMPLANT IN THE MANAGEMENT OF PEYRONIE'S DISEASE WITH SEVERE CURVATURE

A. Ruffo¹, F. Iacono², G. Romeo², S. Mordente¹, M. Punziano¹, G. Di Lauro¹

¹ Ospedale Santa Maria delle Grazie (Pozzuoli)

² Università di Napoli Federico II (Napoli)

In questo video mostreremo un intervento di impianto di protesi peniena tricomponente e grafting dell'albuginea in un paziente affetto da malattia di la Peyronie con severa curvatura dorsale (circa 80°) e deformità a clessidra. Il paziente presentava patologia stabile da circa 6 mesi. Nella fase di insorgenza della malattia (circa 18 mesi precedenti l'intervento) era stato trattato senza successo con 10 infiltrazioni di Verapamil. Al momento dell'intervento il paziente riferiva una disfunzione erettile responsiva a 20mg di Tadalafil.

La procedura avviene con un'incisione sub-coronale. Degloving penieno. Si procede con una singola incisione parauretrale della fascia di Buck e si isola il fascio vascolo-nervoso.

Una volta effettuata l'erezione passiva si marca con penna dermatografica il punto di massima curvatura. Incisione a doppia Y. Si rimuovono placche calcifiche e si procede a grafting con patch di derma porcino (Permacol 0.5 mm, Covidien) che viene suturato con punti in polidossanone 4.0. Chiusura della fascia di Buck. Plastica del prepuzio. L'impianto della protesi peniena tricomponente (Coloplast Titan®) viene effettuato con il classico approccio peno-scrotale. Si evidenzia la correzione della curvatura peniena e l'allungamento di circa 4 cm dell'asta.

9. REAL PENILE LENGTHENING AND WIDENING IN PATIENT WITH PEYRONIE'S DISEASE. PENILE IMPLANT AND MESH GRAFTING

A. Ruffo¹, F. Iacono², L. Romis¹, D. Masala¹, M. Nugnes¹, G. Di Lauro¹

¹ Ospedale Santa Maria delle Grazie (Pozzuoli)

² Università di Napoli Federico II (Napoli)

In questo video mostreremo un intervento di aumento della lunghezza e della larghezza del pene in paziente affetto da malattia di la Peyronie e disfunzione erettile utilizzando impianto di protesi peniena tricomponente e grafting dell'albuginea con mesh. Il paziente riferiva un accorciamento dell'asta di circa 5 cm e presentava una deformità distale con severo restringimento dei corpi

cavernosi e curvatura dorsale di circa 90°.

La procedura avviene con un'incisione peno-scrotale. Si procede con l'isolamento della fascia di Buck e del fascio vascolo-nervoso da un solo lato e la si distacca completamente dalla tunica albuginea.

L'erezione passiva evidenzia deformità distale e curvatura dorsale. Incisione a doppia Y dorsale e grafting con patch di derma porcino (Permacol 0.5 mm, Covidien). Si effettuano due incisioni parauretrali sull'albuginea e grafting longitudinale con mesh parzialmente riassorbibile (Ethicon UltraPro™). Chiusura della fascia di Buck a copertura dei patch. L'impianto della protesi peniena tricomponente (Coloplast Titan®) viene dalla stessa incisione ed peno-scrotale. Si evidenzia la correzione della curvatura peniena e ripristino della normale morfologia dell'asta. Il pene risulta aumentato di 5 cm di lunghezza e di 5.5 di larghezza.

XXIV Congresso
abstracts

venerdì 11 maggio 2018

abstracts XXV Congresso Nazionale AURO.it - ROMA 10 - 12 maggio 2018



11 maggio 2018

15:00 - 16:30

sala Farnese

Comunicazioni 3 - Carcinoma della Prostata - Diagnostica

Moderatori: FRANCESCO MONTANARI, FEDERICA MARCHESOTTI,
MARIA CONSIGLIA FERRIERO

1. IS THERE A NEED FOR STRINGENT PREANALYTICAL OPERATING PROCEDURES FOR FREE PSA AND PHI DETERMINATION? OUR PRELIMINARY EXPERIENCE

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¹ Ospedale Regionale dell'Angelo, Azienda ULSS3 Serenissima, U.O. Urologia (Mestre (VE))

² Centro Regionale dei Biomarcatori, Azienda ULSS3 Serenissima, Dipartimento di Patologia Clinica e Medicina Trasfusionale (Venezia)

³ Istituto Oncologico Veneto (IOV), IRCCS (Padova)

⁴ Servizio di Endoscopia, Azienda ULSS 3Serenissima (Mestre(VE))

Objective

Several studies report that [-2]proPSA, expressed as percentage of free PSA (fPSA) or in the Phi algorithm $\{[-2]proPSA / (fPSA \times totalPSA)1/2\}$, outperforms total PSA (tPSA) and fPSA ratio for the diagnosis of prostate cancer (PCa). Nonetheless, although preanalytical variables are expected to affect its levels, the stability of [-2]proPSA has not been thoroughly evaluated. Our study was designed to investigate the stability of [-2]proPSA, fPSA and tPSA in whole blood after short term sample storage (by mimicking the time that may realistically elapse between sampling and centrifugation in the routine of clinical laboratories) in serum and plasma tubes.

Materials and Methods

Blood was drawn from 26 patients (pts) referred for prostate biopsy (Age: 47-79, median 66; tPSA from 2.34 to 12.77 ng/mL) and separated in polyethylene tubes as follows: 3 tubes for serum and 3 tubes for K2EDTA plasma. The samples were centrifuged after being stored at room temperature for 1, 3 and 5 h from collection. TPSA, fPSA, and [-2]proPSA were assayed with chemiluminescent immunoassays.

Results

TPSA did not show significant variations at the different time points from centrifugation in serum or plasma tubes; fPSA was stable in plasma whereas it significantly decreased in serum (mean percentage of variation: -2.89% after 3 h and -5.98% after 5 h); [-2]proPSA was stable in plasma but it showed a significant and progressive increase in serum (+4.92% after 3 h and +12.46% after 5 h); Phi values were stable in plasma whereas they increased significantly in serum (+8.08% after 3 h and +18.62% after 5 h). TPSA, fPSA and [-2]proPSA were higher in plasma than in serum at any time point examined (1h, 3h or 5h).

Discussions

We confirmed that fPSA and [-2]proPSA are subject to loss of stability over time, showing variations superior to the inherent imprecision of the methods when whole blood collected in serum tubes remained at room temperature up to 5 h before centrifugation. Conversely, the presence of EDTA as anticoagulant in the blood collection tubes prevented spurious in vitro modifications of both markers. Our study indicates the need to adopt stringent preanalytical operating procedures for the determination of different PSA isoforms for clinical use and the need to evaluate with caution the fPSA and Phi values when the whole blood short-term storage protocol before centrifugation is unknown.

Conclusion

Our study indicates the need to adopt stringent preanalytical operating procedures for the determination of different PSA isoforms for clinical use and the need to evaluate with caution the fPSA and Phi values when the whole blood short-term storage protocol before centrifugation is unknown.

2. MULTIPARAMETRIC MRI FOR THE NAÏVE BIOPSY PATIENTS AFTER A FIRST STEP WITH PHI (PROSTATE HEALTH INDEX) SCORE A. Fandella¹, S. Guazzieri¹, G. Loiero¹

¹ Casa di Cura Rizzola (San Donà di Piave)

Objective

We need to identified only the significant Prostate cancer. PSA is not enough sensible to rule out latent PC. Pro2PSA and PHI (prostate health index) can help us in the diagnosis but also here there is a grey zone (1-4). To-day Multi-parametric MRI (mp-MRI) may have a role in ruling-out clinically significant prostate cancer (5-8). We decided to offer to the patients with PSA between 4 and 10 ng/ml the test of PHI and who had PHI under 40 were evaluated with mpMRI.

Materials and Methods

185 consecutive men between January and December 2015 with a mean age 67 years (range 40 to 76y.) and mean PSA 6.2ug/L (range 4.1 to 10) were evaluated., after PHI the Mp-MRI (T1/T2, dynamic contrast enhancement and diffusion weighting, 1.5Tesla, pelvic phased array) was performed each mp-MRI was reported with knowledge of PSA and patient age, by two uro-radiologists expert in prostate MRI. Each prostate was divided into 4 regions of interest (ROI) and a score of 1 to 5 assigned to each ROI (PIRADS 2 score: 1 – no cancer, 5 – highly suspicious).

120 patients which a negative mpMRI entered in a follow – up program. 65 underwent a TRUS fusion guided biopsy for suspicious lesions (12 mapping and target lesion sample and 4 only in the target lesion).

Results

In the 65 mpMRI lesion we found 49 tumors (36 Gleason 7 and 13 Gleason 8) at biopsy. The other enter in follow up (no PSA event in 18 months). Between the 120 pts with normal mpMRI 110 had PSA and DRE stable at more than 18 months, but in 10 the PSA went up and we performed TRUS biopsy. In 6 of 10 a significant Gleason 6 cancer were found.

Discussions

The data obtained in our study are comparable to others published in the literature; phi appears to be the best marker for prostate cancer screening to date followed by %p2PSA.

The study has shown that phi outperforms tPSA and fPSA, when used alone or in combination, and appears to be more accurate than both markers in excluding prostate cancer before biopsy. Therefore, it helps clinicians to avoid unnecessary biopsies, particularly in patients with gray-zone tPSA level. Phi is the strongest marker that correlates proportionally with GS; making it useful in predicting the aggressiveness of the disease (1-4). Our experience suggests that mp-MRI may have a role in ruling-out clinically significant prostate cancer, sparing a considerable number of invasive prostate biopsy. This finding also can be used to address the over-diagnosis burden from PSA screening by using mp-MRI as a triage test to identify men who can avoid a prostate biopsy (5-8). A prospective study of MRI and MRI guided biopsy (not ultrasound fusion) demonstrated improved cancer detection in biopsy-naïve men (9). Cost estimates for the addition of MRI to the initial diagnostic algorithm of prostate cancer have ranged widely and often more closely reflect local market forces than actual resource utilization (8,10,11).

Conclusion

In this setting, mpMRI can help to manage low risk patients, PSA < 10 and PHI > 40, The high negative predictive value for clinically

significant cancer as defined suggests that mp-MRI may have a role in ruling-out clinically significant prostate cancer. This finding could be used to address the over-diagnosis burden from PSA screening by using mp-MRI as a triage test to identify men who could avoid a prostate biopsy

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3. COMPLICATIONS AFTER RANDOM TRUS GUIDED TRANSRECTAL PROSTATE BIOPSY

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Objective

Prostate biopsy is the gold standard procedure to diagnose prostate cancer. The technique is usually performed under transrectal ultrasound (TRUS) guidance with transrectal or transperineal approach. Every year more than 1 million of procedures are realized in Europe. Complication rate is quite low; however fearsome infectious complications are increasing. We have retrospectively evaluated complication rate in our database and we have analyzed predictive factors of complications.

Materials and Methods

From database of our institution we have evaluated complications of patients undergone transrectal random prostate biopsy for suspicion of prostate cancer. Complications were classified as bleeding more than 3 days after biopsy (hematuria, hematospermia, rectal bleeding), infection defined as fever more than 38°C, acute urinary retention (AUR). Hospitalization due to complication was also recorded. We have correlated every complication with age, prostate volume, PSA, PSAD, BMI, number of cores, cancer detection, diabetes mellitus, previous urinary or genital infection, BPCO, previous urological surgery, previous or concomitant tumor. Statistical analysis was performed using Chi square test, Mann Whitney, logistic regression test, as appropriate (SPSS 19).

Results

Data on 2,106 patients were collected. Patients characteristics are reported in table 1. Complications occurred in 6.4% of the patients (table 2). Multivariate analysis revealed correlation only for infection with previous history of urinary or genital infection (p0.001, OR 0.012 - CI 0.001-0.162) (table 3). A minority of patients (15 out of 2,106 0.7%) required hospitalization because of complications (11 for infection, 2 for hematuria, 1 for rectal bleeding, 1 for AUR). However 11.2% (15 of 134) of patients with complication needed hospital admission. Previous urinary or genital infection was the only factor associated with hospitalization (p0.001 - 0.005 0.000-0.125).

Table 1. patients characteristics

Pts (n)	2.106
Age (y)	69.4 ± 8.0
BMI	27.3 ± 8.2
+ve DRE (%)	37.2
PSA (ng/ml)	14.6 ± 39.0
Prostate volume (cc)	59.7 ± 30.7
PSAD	0.28 ± 0.79
Cores number (n)	12.6 ± 3.2
PCa (%)	46.8
Diabetes (%)	12.2
BPCO (%)	3.4
UTI (%)	2.0
Urological surgery (%)	3.7
Urological tumors (%)	3.4
Other tumors (%)	2.9
Neurological disease (%)	2.5
Any concomitant disease (%)	23.7

Table 2. Complications of prostate biopsy (%)

Infection	Hematuria	Hematospermia	Rectal bleeding	Acute urinary retention	Hospitalization	Overall complications
2.1	2.2	19.8	0.2	0.9	0.7	24.7

Table 3. Multivariate analysis of complications

	Infection	Hematuria	Hematospermia	Rectal bleeding	AUR	hospitalization
Age	0.11	0.49	0.26	0.16	0.41	0.47
BMI	0.67	0.67	0.97	0.84	0.89	0.59
PSA	0.32	0.84	0.19	0.36	0.24	0.93
Prostate volume	0.09	0.85	0.86	0.54	0.98	0.09
PSAD	0.28	0.95	0.50	0.32	0.31	0.90
Diabetes	0.88	0.99	0.46	0.99	0.98	0.98
BPCO	0.78	0.99	0.64	0.98	0.99	0.36
infections	0.001-0.005 (0.000-0.125)	0.97	0.98	0.98	0.99	
Previous urological surgery	0.31	0.98	0.69	0.97	0.99	0.09

Urological tumors	0.99	0.62	0.75	0.45	0.97	0.98
Other tumors	0.11	0.97	0.83	0.97	0.98	0.99
Neurological disease	0.99	0.98	0.29	0.96	0.98	0.08
Any concomitant disease	0.28	0.98	0.76	0.98	0.98	0.98
Cores number	0.23	0.82	0.79	0.43	0.11	0.86
PCa	0.38	0.83	0.31	0.96	0.86	0.15

Conclusion

Transrectal random prostate biopsy is a common and safe procedure. Complications rate is generally low (6.4%); hematospermia is more frequent complication (4.7%). Hospitalization is rarely needed (0.7%). However fearsome and lifethreatening infectious complications are main causes of hospital admission

4. PRIMARY TRANSRECTAL RANDOM PROSTATE BIOPSY: IS STILL ACTUAL?

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Objective

Random prostate biopsy is still the gold standard procedure to detect prostate cancer. Multiparametric MRI has been introduced to guide target prostate biopsy to improve detection of clinically significant prostate cancer. Today is debated whether primary biopsy should be performed with random or target approach. We evaluated outcomes of patients undergone first transrectal random prostate biopsy. We also evaluated predictive factors of prostate cancer diagnosis.

Materials and Methods

Patients with suspicious of prostate cancer based on PSA, DRE, ultrasound findings underwent a TRUS guided transrectal biopsy. Procedure was performed under local anaesthesia or intravenous sedation as indicated. Clinical and pathological data were prospectively collected from May 2010 to September 2017 in our database. We calculated cancer detection rate and we identified predictive factors of cancer. Statistical analysis was performed using Chi square test, Mann Whitney, logistic regression test, as appropriate (SPSS 19).

Results

Data on 1974 patients were available. Patients characteristics are reported in table 1. Indications for biopsy are reported in table 2. Prostate cancer has been diagnosed in 46.4% of the patients (table 3). There is an increasing trend in cancer detection rate per year (table 4). Positive patients presented ≥ 3 positive cores or Gleason $\geq 3+4$ in 78.5% and 86.7%, respectively. At multivariate analysis, age, PSA, DRE, prostate volume, number of cores, and year of biopsy are predictive of cancer diagnosis.

Table 1. patients characteristics

Age (y)	Bmi (n)	Psa (ng/ml)	Prostate volume (cc)	PSA density	Cores number (n)	+ve DRE (%)
66.3	27.4 8.4	14.9 39.8	60.8 3.3	0.28 0.79	12.7 2.8	37.9

Table 2. Indication for biopsy %

PSA	PSA+ER	PSA+TRUS	ER	TRUS
70.7	27.3	0.2	1.7	0.1

Table 3. Prostate biopsy results

Result	IPB	ASAP	HGPIN	Cancer
%	40.0	4.3	9.3	46.4

Table 4. per year cancer detection rate

Year	pts (n)	Cancer detection rate (%)
2010	176	39.2
2011	266	41.7
2012	303	37.6
2013	309	46.9
2014	239	50.9
2015	307	53.1
2016	205	54.2
2017	169 4	9.1

Table5. multivariate analysis for cancerdetection rate.

Variable	P value	OR	95 CI
Age	0.002	1.034	1.012-1.056
BMI	0.13	1.019	0.994-1.044
+DRE	<0.001	0.293	0.212-0.407
PSA	<0.001	0.939	0.909-0.971
Prostate volume	<0.001	0.986	0.977-0.994
Coresnumber	<0.001	0.874	0.816-0.937
Year of biopsy	<0.001	1.101	1.055-1.149

Conclusion

Random transrectal prostate biopsy identified cancer in 46% of all patients. In the last three years, cancer detection rate is more than half of the patients. More than three quarters of patients presented a clinically significant cancer. Age, PSA, positive DRE, prostate volume and number of cores are correlated with presence of cancer

5. MPMRI/ULTRASOUND FUSION-GUIDED PROSTATE BIOPSY: CAN WE FORGET RANDOM CORES?

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Objective

An extended Prostate Biopsy (10–12 cores) remains the standard for the initial diagnostic evaluation of a suspicious prostate 1 .The rate of prostate cancer (PCa) detection for a first systematic transrectal ultrasound-guided biopsy (TRUS-GB) is typically 30–50% 2 . Nevertheless, clinically significant PCa can be missed even after several repeat TRUS-GB. Multiparametric MRI (mpMRI) of the prostate is able to detect clinically relevant CaP 3-4 . The ability to visualize suspicious PCa on mpMRI allowed to use images as targets for needle biopsy by incorporating (i.e. fusing) mpMRI into a needle-aiming or targeting method 5 . The aim of the study was to evaluate the utility of still performing random cores during targeted magnetic resonance imaging/ultrasound fusion-guided biopsy (FUS-GB) in the diagnosis of clinically significant prostate cancer (PCa).

Materials and Methods

Between November 2013 and May 2017, all men with previous history of negative prostate biopsy with PSA level of 4-20 ng/mL undergone mpMRI and FUS-GB + TRUS random biopsy, were consecutively included in the study. All men underwent a 12 extended-cores protocol plus 2-3 targeted cores on the mpMRI index lesion. The UroStation™ (Koelis, France) and a V10 ultrasound system with an end-fire 3D TRUS transducer were used for the fusion images procedure. We analysed the detection rate of clinically significant PCa with FUS-GB + TRUS random biopsy and the incident of positive biopsy in target cores and in random cores.

Results

Two hundred and twenty nine men were included in this multicenter study. The median time between mpMRI and biopsy was 30 days. MpMRI detected at least 1 suspicious area in 165 patients (72%), 2 or more suspicious areas in 64 patients (28%). Overall, 122/229 patients (53.2%) had positive biopsies. Gleason score 3+3 was found in 64 patients (52.4%), Gleason score 3+4 in 31 patients (25.4 %), Gleason score 4+3 in 12 patients (9.8%), Gleason score 4+4 in 15 patients (12.2%). The rate of cores positive for clinically significant cancer in target cores alone was 68 % versus 4 % for standard cores alone (p≤0.001).

Discussions

In naive patients, ultrasound (US)-guided random biopsy is the standard of care to diagnose a prostate cancer. A transrectal approach is used for most prostate biopsies, although some urologists prefer a perineal approach. Cancer detection rates are comparable with both approaches. Correlation between mpMRI imaging (associating T2-weighted imaging with diffusion-weighted imaging, dynamic contrast-enhanced imaging, and/or H1-spectroscopy) and radical prostatectomy (RP) shows good sensitivity for the detection and localisation of Gleason score > 7 cancers 6-7 . Three methods of MRI guidance are available for targeted prostate biopsy: cognitive fusion, direct MRI-guided biopsy, performed within an MRI tube and software coregistration of stored MRI with realtime ultrasound, using a fusion device 8 . Wegelin O. et al shows that magnetic resonance imaging-guided biopsy detects more clinically significant prostate cancer (PCa) and less insignificant PCa compared with systematic biopsy in men at risk for PCa. MRI-Guided Biopsies (MRI-GB) had similar overall PCa detection rates compared with TRUS-Guided Biopsies, increased rates of csPCa, and decreased rates of insignificant PCa. MRI-Target Biopsy (MRI TB) has a superior overall PCa detection compared with Cognitive-TB. Fusion-TB and MRI-TB appear to have similar detection rates. Head-to-head comparisons of MRI-GB techniques are limited 9 . In a recent systematic review, in patients with previous negative prostate biopsy MRI-GB detected more prostate cancer (46.3% vs 26.6%), more significant prostate cancer (32 % vs 16%) and less non significant prostate cancer (9.5% vs 14.5%) than TRUS, with less number of biopsies 10 . In our study, target biopsy with fusion MRI-TRUS image registration significantly improved cancer detection over that of systematic transrectal ultrasound-guided biopsy. FUS-GB alone missed only 2% high grade cancers detected by TRUS-GB.

Conclusion

In our experience, MRI/TRUS-fusion targeted biopsies detected more men with clinically significant PCa than standard biopsies. Therefore, it's reasonable to avoid random cores and perform only target cores. Randomized extended and saturation prostate biopsies ruled in a "past prostate biopsy scenario". They are still a gold standard, but we can assume that they are quickly going to be forgotten

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6. MRI/US FUSION PROSTATE BIOPSY: OUR EXPERIENCE

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Objective

We present our experience with MRI/US fusion biopsy after the first 125 consecutive patients.

Materials and Methods

We prospectively evaluated the first consecutive 125 patients underwent to TRUS/US fusion biopsy. MRI images were obtained using a 1.5T scanner with a pelvic phased array coil, each suspicious area was further characterized according to the ESUR PI-RADS v.2 global score. All biopsy core specimens were examined by 2 urogenital pathologists and graded according to the 2005 International Society of Urological Pathology Modified Gleason Grading System

Characteristics of the patients: 80 patients with at least 1 negative biopsy (mean previous negative biopsies 1.2, CI 0-3), 32 biopsy-naïve patients, 13 patients on active surveillance. Mean age 66,1 years (CI 48-78), mean PSA= 8,1 ng/ml (CI 3.3- 21); mean Prostate Volume 57,7 ml (CI 22-140), DRE positive in 6/125, number of lesions detected by MRI 1.4 (66 PIRADS 3, 54 PIRADS 4, 5 PIRADS 5) mean cores from each MRI target lesion 3 (CI 2-6), mean total cores 15 (CI 12-19).

Results

55/125 positive for PCA (overall detection rate of 44%). 14/66 positive for PCA in PIRADS 3 patients (detection rate of 21%), 37/54 positive for PCA in PIRADS 4 patients (detection rate of 68%), 4/5 positive for PCA in PIRADS 5 patients (detection rate of 80%).

In biopsy naïve patients (32 of 125 pts) we obtained a detection rate of 59% (19/32 PCA): 55%(5/14) in pirads 3, 75% in PIRADS 4 (12/16), 100% (2/2) in PIRADS 5. Significant PCA in 10/32 (31%). 7 significant PCA was detected in target core e 3 in random core. in 8/32 PCA the random mapping was diagnostic (target negative)

In re-biopsy patients (80 of 125 pts) we obtained a detection rate of 33% (27/80 PCA): 14%(7/51) in pirads 3, 69% in PIRADS 4 (18/26), 66% (2/3) in PIRADS 5. Significant PCA in 16/32 (50%), 14 in target core e 2 in mapping core. in 7/27 PCA the random mapping was diagnostic (target negative)

In patients on active surveillance (13 of 125 pts) we obtained a positive biopsy in 9/13 pts (69%): in 5/13 fusion biopsy histology caused the switching to active treatment

The mean time of the procedure was 42 min (C.I. 22-55) in the first 20 patients , 32 min (C.I. 20-42) in the second 20 patients and than 20 min patients (C.I. 16-32)

Conclusion

Our overall detection rate was 44% (Significant PCA in 31% of Naïve patient and 50% in repeated biopsy). These results are similar to current literature and promising for the future. We believe that using a platforms of co-registered MRI/US fusion biopsy we improved risk stratification and reduced underdiagnosis, understaging, undergrading in biopsy naïve patient, in patients with a previous negative biopsy and persistent suspicion of PCA and in patients on active surveillance. Fusion target biopsy is always associated with random mapping in our experience.

7. DEVELOPMENT AND EXTERNAL VALIDATION OF MRI-BASED NOMOGRAM TO PREDICT THE PROBABILITY OF PROSTATE CANCER DIAGNOSIS WITH MRI-US FUSION BIOPSY

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Objective

The wide diffusion of multiparametric magnetic resonance imaging (MRI) has dramatically modified the scenario of prostate cancer (PCa) diagnosis. The detection rate of MRI-ultrasound (US) fusion biopsy increased as well as the need for an extended prostate biopsy sampling with saturation biopsy decreased. The aim of this study was to develop, to calibrate and to externally validate a nomogram to predict the probability of detecting a clinically significant prostate cancer.

Materials and Methods

Prospectively collected data from 3 european tertiary referral center series of 478 consecutive patients who underwent MRI-US fusion biopsy using the UroStation™ (Koelis, France) were used to build the nomogram. External validation was performed in 406 patients from a US tertiary referral center. The Mann-Whitney U test and the Chi-square tests were used to evaluate differences in continuous and categorical variables, respectively. A logistic regression model is created to identify predictors of PCa diagnosis with MRI-US fusion biopsy. Predictive accuracy was quantified using the concordance index (CI). Internal validation with 200 bootstrap resampling and calibration plots were generated to explore nomogram performance.

Results

The development and validation cohorts were homogeneous for age (66.3 vs 66 yrs, $p=0.57$), PSA levels (9.4 vs 8.8 ng/ml, $p=0.71$) and PCa detection rates (57.4 vs 56.7%, $p=0.81$). Age, PSA serum levels, PIRADS score at MRI report, number of targeted and number of systematic cores taken were included in the model (Figure 1a). The nomogram showed high predictive accuracy (CI 0.82) and was well calibrated (Figure 1b). In the validation cohort the predictive accuracy was 0.77. Limitations include the need for a pre-biopsy mp-MRI and consequent fusion biopsy to reproduce findings.

Discussions

The wide diffusion of multiparametric magnetic resonance imaging (MRI) has dramatically modified the scenario of prostate cancer (PCa) diagnosis. The detection rate of MRI-ultrasound (US) fusion biopsy increased as well as the need for an extended prostate biopsy sampling with saturation biopsy decreased [1]. Our nomogram provides a high accuracy in predicting the probability of PCa diagnosis with MRI-US fusion biopsy. This is an easy to use clinical tool that physicians may use for patients counseling purposes.

Conclusion

This nomogram provides a high accuracy in predicting the probability of PCa diagnosis with MRI-US fusion biopsy. This is an easy to use clinical tool that physicians may use for patients counseling purposes.

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8. MRI-BASED NOMOGRAM TO PREDICT CLINICALLY SIGNIFICANT PROSTATE CANCER ON MRI/TRUS FUSION PROSTATE BIOPSY: DEVELOPMENT AND EXTERNAL VALIDATION

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Objective

The aim of this study is to create, calibrate and externally validate a nomogram to predict the probability of detecting clinically significant prostate cancer (CSPCa) on magnetic resonance imaging-transrectal ultrasound (MRI/TRUS) fusion guided prostate biopsy (PBx).

Materials and Methods

We identified 884 consecutive patients from prospectively maintained IRB-approved PBx databases of 4 tertiary referral centers. All patients underwent MRI/TRUS fusion PBx, targeting suspicious lesions followed by 12-core systematic PBx, using the UroStation™ (Koelis, France), from 2013 to 2016. Patients were included if they underwent pre-PBx multi-parametric MRI (3T; DWI, T2W, DCE) that showed PIRADS score ≥ 3 . Exclusion criteria were a negative MRI (PIRADS < 3) or patients with any

prior treatment for PCa. The MRIs were evaluated and reported, by experienced radiologists, using Prostate Imaging – Reporting and Data System (PIRADS V2). Data from 478 consecutive patients from 3 European centers were used to create the nomogram. External validation was performed using data of 406 patients from a single center from USA. CSPCa was defined as Gleason > 3+4. The Mann–Whitney U test and the Chi-square tests were used to evaluate differences in continuous and categorical variables, respectively. A logistic regression model was created to identify predictors for CSPCa. Predictive accuracy was quantified using the concordance index (CI). Internal validation with 200 bootstrap resampling and calibration plots were generated to explore nomogram performance.

Results

The development and validation cohorts were homogeneous for age (66.3 vs 66 yrs, $p=0.57$), PSA (9.4 vs 8.8 ng/mL, $p=0.71$) and overall PCa detection rates (57.4 vs 56.7%, $p=0.81$). Age, PSA, PIRADS score, number of targeted and number of systematic cores taken were included in the model (Figure 1a). The nomogram showed high predictive accuracy (CI 0.81) and was well calibrated (Figure 1b). In the validation cohort the predictive accuracy was 0.80. Limitations include the need for a pre-biopsy mp-MRI and consequent fusion biopsy to reproduce findings.

Discussions

The aim of this study is to create, calibrate and externally validate a nomogram to predict the probability of detecting clinically significant prostate cancer (CSPCa) on magnetic resonance imaging–transrectal ultrasound (MRI/TRUS) fusion guided prostate biopsy (PBx) [1]. A nomogram that provides a high accuracy in predicting the probability of diagnosing clinically significant PCa with MRI/TRUS fusion biopsy is created and validated. The simplicity of this nomogram makes it a useful clinical tool for both patients and physicians.

Conclusion

A nomogram that provides a high accuracy in predicting the probability of diagnosing clinically significant PCa with MRI/TRUS fusion biopsy is created and validated. The simplicity of this nomogram makes it a useful clinical tool for both patients and physicians

Reference

1. Magnetic resonance imaging for localization of prostate cancer in the setting of biochemical recurrence. Panebianco V, Barchetti F, Grompone MD, Colarieti A, Salvo V, Cardone G, Catalano C. Urol Oncol. 2016 Jul;34(7):303-10. doi: 10.1016/j.urolonc.2016.01.004. Epub 2016 Mar 21. Review.

9. THE REBIOPSY OF THE PROSTATE IN THE ERA OF MULTIPARAMETRIC (MP) MAGNETIC RESONANCE IMAGING (MP-MRI): SATURATION TECHNIQUE AGAINST TARGET ONLY FUSION BIOPSY

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Objective

To evaluate the best strategy for the correct “detection rate” of significant prostate cancer (PC) in patients who must undergo repeat biopsy. Saturation 24 sample in no MRI lesion against target biopsy with fusion technique in finding of Pirads 3-5 lesions.

Materials and Methods

In the period 1.2014- 12.2016 we performed consecutively mp-MRI in 221 high risk patients (62aa mean age (range 50 – 74), average

PSA 13.53 ng/ml, (range 4.6 – 23), negative DRE)

who need rebiopsy. 112 Negative mp-MRI underwent “saturation biopsy”. 109 mp-MRI with lesion Pirads 3-5 underwent target fusion biopsy.

Each patient had already been subjected to at least one previous set biopsy with a number average of 12 samples. This indication was previous diagnosis of PIN/ ASAP in 24 (16 pts PIN / ASAP 8 patients) or abnormal increase in the PSA.

Each procedure, performed outpatient basis, was conducted by transrectal way, patients with negative mp-MRI underwent saturation with peripheral block, using a schema biopsy default to 24 withdrawals. Patients with positive mp-MRI (Pirads 3-5) underwent target biopsy, 4 sample for each lesion, using Toshiba Aplio 500 fusion software

Results

112 patients saturation biopsy 36 PC (31 Gleason 6 – 5 Gleason ≥ 7) 76 BPH.

109 patients target biopsy 64 PC (6 Gleason 6 – 58 Gleason ≥ 7) – 45 BPH

29 patients underwent surgery in saturation group; 2 pT3 and 27 pT2, no significant variation in Gleason Score.

58 patients underwent surgery in target fusion biopsy 53 pT3 and 5 pT2, no significant variation in Gleason Score

Discussions

The indication for which there appears to be the best evidence for cost efficacy in prostate MRI is in the man with a negative prior ultrasound-guided prostate biopsy and continued clinical suspicion for prostate cancer (1). In the past clinical nomograms provided information about likelihood of repeated biopsies being positive, but did not provide guidance for localization of repeat biopsy (2). Similarly, additional tests and biomarkers have been shown to improve the performance of PSA in men with prior negative biopsy (3). Studies of MR guided biopsy in men with prior negative ultrasound biopsy have shown an increased rate of detection of high grade tumors, especially in the anterior prostate, a region often poorly sampled in ultrasound-guided biopsy (4). A study from 2015 showed both cost savings in using MRI to inform repeat biopsy and that a large portion of repeat biopsies could be avoided (5). In patients undergoing MR-guided biopsy after negative prior biopsy the possibility of avoiding systematic (non-targeted) biopsies as a cost saving measure has been raised. This approach should be used with caution as it appears that systematic biopsies still add value and detect some clinically relevant cancers in this setting (6). As MRI techniques continue to refine and MRI use in prostate cancer management grows, MRI before repeat prostate biopsy is likely to become increasingly common.

Until recently, prostate biopsy for the detection of prostate cancer has been performed transrectally and in an untargeted sampling fashion. Consequently, the procedure has suffered a small but significant risk of severe morbidity through infection, and low diagnostic accuracy, with undergrading and missed diagnosis being common. MRI is revolutionizing prostate cancer diagnosis by improving detection accuracy via targeted biopsy (7).

In fact, there is now a growing evidence in the literature that (a) saturation PBx (>20 cores) (SPBx) might be indicated in patients with PSA <10 ng/ml or low PSA density or large prostate and (b) an individualized approach with more than 12 cores according to the clinical characteristics of the patients may optimize cancer detection in the single patient. Moreover, in the era of multiparametric MRI (mpMRI), EPBx or SPBx may be substituted by mpMRI-targeted biopsies (8)

Conclusion

After a negative mp-MRI of the prostate running extended mapping biopsy ("saturation biopsy") has a detection rate of less than 30% but of Gleason 6 tumors, and nowadays probably is not recommended to rule out significant (high risk) prostate cancer. The correct scheme of sample with a positive mp-MRI is under discussion, we think that, after previous negative prostate mapping biopsy, target samples could be sufficient to find potentially lethal prostate cancer. Detection rate is up to more than 60% and about all significant cancer.

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10. ATYPICAL ADENOMATOUS HYPERPLASIA (AAH) OF THE PROSTATE IN A CASE REPORT WITH PREVIOUS DIAGNOSIS OF ASAP (ATYPICAL SMALL ACINAR PROLIFERATION): A REVIEW OF THE LITERATURE

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Objective

Case report of Atypical Adenomatous Hyperplasia and review of literature.

Materials and Methods

A 61-year old man performs periodic checks of PSA (prostate-specific antigen) with elevated level of 4.02 ng/mL and Ratio 18% (PSA free/PSA total). He doesn't present with symptoms of urinary obstruction. The first prostate biopsy showed glandular atypia on lateral right and intermediate left side, with negative immunoreaction for anti-cytokeratin 34betaE12. The second biopsy showed evidence of ASAP on the left apex, with negative immunoreaction for anti-cytokeratin 34betaE12. The third biopsy is negative for atypical or cancerous lesions. After the three biopsies the patient performs an abdominal NMR (Nuclear Magnetic Resonance), that is negative for neoplasms and it doesn't show disomogeneity of prostatic parenchyma. So he performs a saturation biopsy with 32 specimens. At that time the level of PSA is 4.12 ng/mL and Ratio 17%. The results of saturation biopsy shows evidence of Atypical Adenomatous Hyperplasia (AAH) on left lateral side, with immunoreaction slowly positive for AMACR (alphamethylacyl-coenzyme A-racemase) and patchy immunostaining high-molecular-weight cytokeratin 34betaE12. This case is a review of the literature about the AAH and highlights the differences with low grade adenocarcinoma or precancerous lesions like PIN (prostatic intraepithelial neoplasia) or ASAP.

Results

A 61 year-old male man performs periodic checks of PSA with elevated level of 4.02 ng/mL and Ratio 18%. He doesn't present with symptoms of urinary obstruction. Digital rectal examination reveals a large prostate (estimated volume doubled) without nodules suggestive of malignancy. Some needle biopsies are performed.

The first biopsy showed glandular atypia on lateral right and intermediate left side. The specimens show lymphogranulocyte inflammation with lymphoid aggregates; in one of these, there is a glandular microaggregate with nuclear atypia, and negative immunoreaction for anti-cytokeratin 34betaE12. It's not possible to make sure of diagnosis so the patient will repeat the prostate biopsy after 6 months, with new dosage of PSA

Before the second biopsy the presentation clinical and the dosage of PSA are stable (4.1 ng/mL). The second biopsy showed specimens of the left apex with lymphocyte inflammation with typical cytological and architectural atypia as a ASAP, and negative

immunoreaction for anti-cytokeratin 34betaE12. European and American guidelines suggest repeating prostate biopsy within 6 months.

Before the third biopsy the presentation clinical and the dosage of PSA are stable (3.8 ng/ml). The third biopsy, examining 12 specimens, is negative for atypical or cancerous lesions.

After 2 months from the last biopsy the patient performs an abdominal NMR, that is negative for neoplasms and it doesn't show disomogeneity of prostatic parenchyma.

After 6 months from the last biopsy the patient performs a saturation biopsy with 32 specimens. The clinical features and the dosage of PSA are stable (4.12 ng/ml and Ratio 17%). The specimens show evidence of atypical adenomatous hyperplasia on left lateral side, with slowly positive for AMACR (aliphatic methylacyl-coenzyme A-racemase) and patchy immunostaining high-molecular-weight cytokeratin 34betaE12.

AAH is a pseudoneoplastic lesion that can mimic the prostate adenocarcinoma. AAH is usually an incidental finding in TURP (transurethral resection of prostate) or found in the transition zone in a prostate biopsy [1]. The case reports that AAH is found on left lateral side, with a suspect glandular atypia in the first biopsy on lateral right and intermediate left side, and with ASAP in the second biopsy on the left apex.

The specimens were examined always in the same lab.

In literature, AAH is rare finding, reaching only 2% of transurethral resection of the prostate specimens and < 1% of core biopsy specimens. [6] Typically, they are lined by cuboidal to short columnar cells. Also, the glands will be densely packed, stay well separated, and show no evidence of fusion. The luminal borders will be serrated and irregular. The lumens of glands/acini will often be empty but can contain corpora amylacea and crystalloids in 24% of biopsies. [5]

Discussions

AAH is frequently multifocal, and in 84% of cases has been associated with nodular hyperplasia. It can be difficult to distinguish AAH from low-grade prostatic adenocarcinoma because both can be observed in the transition zone and can show intraluminal crystalloids and mitotic figures. The crucial feature of all AAH cases is a fragmented basal cell layer, which can be demonstrated by patchy immunostaining for high-molecular-weight cytokeratin 34betaE12 or p63. [8]

Today no evidence is available indicating the progression of AAH into prostatic intraepithelial neoplasia (PIN). [4]

A similar histological pattern can be the partial atrophy. It can be mistaken for cancer because of the AMACR, which is found in 69.1% of such cases. AMACR is found by staining with cytokeratin 34betaE12/p63, which will be negative in 31.4%. Typically it's found on peripheral side of the gland and the differential diagnosis with AAH, even if, as in the AAH, today no evidence is available indicating progression into PIN [6]

Conclusion

AAH is a rare histologic finding of the prostatic biopsies. There are some typical findings of immunohistochemistry to distinguish a ASAP/PIN from AAH or low grade adenocarcinoma or partial atrophy, but It need experience from the pathologist.

The indications to repeat biopsy are:

- rising and/or persistently elevated PSA
- suspicious DRE, 5-30% cancer risk
- atypical small acinar proliferation (i.e., atypical glands suspicious for cancer), 40% risk;
- extensive (multiple biopsy sites, i.e., > 3) high-grade prostatic intraepithelial neoplasia (HGPIN), ~30% risk
- a few atypical glands immediately adjacent to high-grade prostatic intraepithelial neoplasia (i.e., PINATYP), ~50% risk
- intraductal carcinoma as a solitary finding, > 90% risk of associated high-grade prostate carcinoma
- positive multiparametric magnetic resonance

European Guidelines don't specify the way of follow-up of AAH, but some studies say the patients have to continue the controls like in benign lesions (once a year).

Our team, considering the previous diagnosis of ASAP, although there is no evidence of progression into cancerous lesion either of correlation between ASAP and AAH, has decided to continue the follow-up as a ASAP or PIN, respectively a dosage of PSA and prostatic rebiopsy every 4 or 6 months.

Alternately, it's useful to repeat the dosage of PSA every 4 or 6 months and the pelvic multiparametric RMN.

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11. VASCULAR HURST INDEX IN NON-TUMORAL BIOPSY CORES AS POTENTIAL HISTOPATHOLOGICAL PARAMETER TO SELECT PATIENTS WITH HIDDEN PROSTATE CANCER

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Objective

Prostate cancer is the second most prevalent cancer in men globally. It is now accepted that angiogenesis is a complex phenomenon accompanying the development, progression, and metastasis of tumors of unrelated histological origin. Here we introduce the Hurst index to investigate the two-dimensional (2-D) geometrical complexity of the tumor vascular network in biopsy specimens to comprehend whether non-tumoral biopsy cores might be helpful to select patients with hidden prostate cancer.

Materials and Methods

1984 biopsy cores sampled from a total of 316 patients were analyzed. Patients were categorized in two main groups: a) Prostate Cancer Group, which includes 140 patients with first positive biopsies for prostate cancer and 60 patients negative for prostate cancer at first biopsy and positive at re-biopsy, and b) Control Group, which includes 60 patients negative for prostate cancer at the first, second and third biopsy, and 56 patients with benign prostatic hyperplasia (BPH) following transurethral resection of the prostate (TURP). Two-micrometer thick sections were cut and processed for immunohistochemistry with primary antibodies raised against CD34 (Dako, Milan, Italy). This was followed by 30 min incubation with the Envision system (Dako). 3,3'-Diaminobenzidine tetrahydrochloride was used as a chromogen to yield brown reaction products. The histological sections were digitized using a computer-aided image analysis system that automatically selected the immunopositive vessels on the basis of RGB color segmentation and calculated the Hurst index by applying the formula:

$H = E + 1 - D$, where the Euclidean dimension E is equal to 1 and D represents the 2-D vascular surface fractal dimension. All of the data were analyzed using Statistica software (StatSoft, Inc., Tulsa, OK, USA) and GraphPad Prism 5 (San Diego, California, USA). P-values of ≤ 0.05 were considered to be statistically significant.

Results

A low Hurst index values in negative core biopsies suggest a higher probability of hidden prostate cancer. We found that Hurst index values in the non-tumoral biopsy below 0.20 suggest that the risk to have hiding prostate cancer is high. In contrast, Hurst indexes in the non-tumoral biopsy upper than 0.35 suggests that the risk to have misunderstood and contemporary prostate cancer is low.

Discussions

Scientific knowledge develops through the evolution of new concepts, and this process is usually driven by new methodologies that provide previously unavailable observation. The potential broad applicability of the Fractal geometry makes it possible to explore the range of the morphological variability of neovasculature that can be produced in nature, thus increasing its diagnostic importance in cancer research. Prostate histology may remain the reference method for assessing the status of neovascularity, but there are still several open questions, including whether angiogenesis is a canonic hallmark of PC, and the absence of a powerful method of quantifying the reversal of neovascularity.

Conclusion

This study first shows that vascular Hurst index in non-tumoral biopsies might represent a low-cost adjunctive histopathological predictive value of prostate cancer. The proposed computer-aided analysis is cheap and might be introduced in combination with actual histopathological procedures to support the clinical practice. In addition, the present study first introduces the concept that also the non-tumoral biopsy tissue might have an informative content on the presence of a contemporary cancer.

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12. ADAR1 IS HIGHLY EXPRESSED IN PRIMARY PROSTATE CANCER AND CORRELATED

WITH CD8+ T-LYMPHOCYTES DENSITY G. Taverna¹, F. Grizzi², P. Colombo³, S. Melegari¹, M. Justich¹, O. De Francesco¹, G. Bozzini¹, M. Lazzeri⁴, A. Benetti⁴, R. Hurle⁴, R. Peschechera⁴, L. Pasini⁴, S. Zandegiacomo⁴, P. Casale⁴, G. Lughezzani⁴, N. Buffi⁴, A. Mandressi¹, G. Guazzoni⁴

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Objective

It is now recognized that the evolution of cancer cells is dependent by genetic or epigenetic alterations. However, this concept has recently been challenged by another mode of nucleotide alteration, RNA editing, which is frequently upregulated in cancer. RNA editing is a biochemical process in which either Adenosine or Cytosine is deaminated by a group of RNA editing enzymes including ADAR (Adenosine deaminase; RNA specific). The result of RNA editing is usually adenosine to inosine (A-to-I) or cytidine to uridine (C-to-U) transition, which can affect protein coding, RNA stability, splicing and microRNA-target interactions. The aim of this study was to preliminarily investigate the expression of ADAR1 in a series of prostate cancer specimens and benign prostatic hyperplasia (BPH) following transurethral resection of the prostate (TURP).

Materials and Methods

Sixty prostate specimens were investigated. Fifty specimens were diagnosed as prostate carcinoma and 15 as benign prostate hyperplasia. The samples were fixed in 10% formaldehyde and paraffin-embedded. Two-micrometer thick sections were cut and processed for immunohistochemistry with primary antibodies raised against ADAR1 (SantaCruz Biotechnology, Dallas, TX, USA) or CD8+ T-lymphocytes (Dako, Milan, Italy). This was followed by 30 min incubation with the Envision system (Dako). 3,3'-Diaminobenzidine tetrahydrochloride was used as a chromogen to yield brown reaction products. To quantify the surface covered by infiltrating CTLs each histological section was digitized using an automated image analysis system with incorporated ad hoc constructed image analysis software. The system automatically selected the surface covered by the CTL on the basis of red, green and blue (RGB) color segmentation.

Results

ADAR1 up-regulation was heterogeneously detected in a high percentage of prostate cancer tissues, but to a much lesser extent in adjacent non-malignant tissues or tissue affected by BPH ($p < 0.001$). Prostate cancers with high ADAR1 expression exhibited high tumor-infiltrating CD8+ T lymphocyte.

Discussions

Recent findings that ADAR1 is involved in the recognition of self versus non-self dsRNA provide potential explanations for its links to hematopoiesis, type I interferonopathies, and viral infections. Editing in both coding and noncoding sequences results in diseases ranging from cancers to neurological abnormalities. Furthermore, editing of noncoding sequences, like microRNAs, can regulate protein expression, while editing of Alu sequences can affect translational efficiency and editing of proximal sequences. Novel identifications of long noncoding RNA and retrotransposons as editing targets further expand the effects of A-to-I editing. Besides editing, ADAR1 also interacts with other dsRNA-binding proteins in editing-independent manners. Elucidating the disease-specific patterns of editing and/or ADAR1 expression may be useful in making diagnoses and prognoses. With the growing understanding of the functions of noncoding sequences and their impacts on human diseases, the role of ADAR1 in disease development is increasingly appreciated. Swift improvements in sequencing technologies have also facilitated bioinformatics studies that reveal the editing targets of ADAR1. Although we are still far from fully understanding the mechanistic aspects of ADAR1's action, including how the dsRNA-binding domains on ADAR1 are used, the full structure of ADAR1, and the editing targets of ADAR1 that are precluded from sequencing studies, the present knowledge of ADAR1's impacts in human pathologies may provide new possibilities for treatments and preventive measures. For instance, the levels of RNA editing by ADAR1 could serve as new tools for diagnosis in cancer stem cell-related illnesses. In situations where ADAR1 overexpression contributes to disease progression, as seen in several cancers, or where ADAR1 interacts with other proteins in editing-independent manners, inhibition of ADAR1 could potentially be another strategy in treatment [1].

Conclusion

ADAR expression is associated with several diseases including cancer, neurological disorders, metabolic diseases, viral infections, and autoimmune disorders. This study first shows that ADAR1 is highly expressed in a high percentage of prostate cancer tissues, but to a much lesser extent in adjacent non-malignant tissues or tissue affected by benign prostatic hyperplasia. Additionally, prostate cancers with high ADAR1 expression exhibited high tumor-infiltrating CD8+ T lymphocyte. Our findings indicated that ADAR1 might play an important role in the occurrence, progression, and prognosis of prostate cancer, and open new ways for the development of new and more effective immunological therapeutical strategies.

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13. SERPINB3: A NOVEL HISTOPATHOLOGICAL BIOMARKER OF PROSTATE CANCER AGGRESSIVENESS

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Objective

SERPINB3, also known as Squamous Cell Carcinoma Antigen-1 or SCCA1 is a member of the family of serine-protease inhibitors. SERPINB3 protects cells from oxidative stress conditions, but in chronic damage this serpin may lead to cancerous lesions through different strategies, including inhibition of apoptosis, induction of epithelial to mesenchymal transition and decrease of desmosomal junctions, cell proliferation and invasiveness. The aim of the present study was to investigate the protein expression of SERPINB3 in a series of prostate cancer specimens and benign prostatic hyperplasia (BPH) following transurethral resection of the prostate (TURP).

Materials and Methods

Sixty prostate specimens were investigated. Fifty specimens were diagnosed as prostate carcinoma and 15 as benign prostate hyperplasia. The samples were fixed in 10% formaldehyde and paraffin-embedded. Two-micrometer thick sections were cut and processed for immunohistochemistry with primary antibodies raised against SERPINB3 (Proteintech, Rosemont, IL, USA). This was followed by 30 min incubation with the Envision system (Dako). 3,3'-Diaminobenzidine tetrahydrochloride was used as a chromogen to yield brown reaction products.

Results

SERPINB3 expression was detected in a high percentage of prostate cancer tissues (80%), but to a much lesser extent in adjacent non-malignant tissues (20%) or tissue affected by benign prostatic hyperplasia ($p < 0.001$). High levels of SERPINB3 expression

were found in advanced prostate tissue specimens.

Discussions

The levels of SERPINB3 transcripts or proteins from biological samples have been used in numerous studies to predict disease stage and response to therapy. Detailed histological analysis revealed that SERPINB3 is normally expressed in squamous epithelial cells of tongue, esophagus, tonsils, epidermal hair follicles, lung and uterus, while becoming highly up-regulated in squamous carcinomas of these organs anyway SERPINB3 levels have also been shown to coincide with tumor infiltration and frequency of lymph node metastasis in both cervical and esophageal squamous cell carcinomas. Recent evidence also suggests that SERPINB3 expression is not limited to cancers of squamous origin but also extends to adenocarcinoma of the lung, breast, and pancreas, as well as hepatocellular carcinoma.

In addition to being a biomarker, SERPINB3 have been found to associate with several oncogenic processes, suggesting that they are bona fide oncoproteins. Ectopic expression of SERPINB3 leads to oncogenic transformation of the non-tumorigenic mammary epithelial cells. The positive association of elevated SERPINB3 with more advanced malignancy as well as poor prognosis suggests that SERPINB3 may have a positive impact on tumorigenesis and/or tumor progression. The pro-tumorigenic role of SERPINB3 has been largely attributed to their anti-cell death function. SERPINB3 has been shown to protect cancer cells from apoptosis induced by UV irradiation and anti-cancer therapy. SERPINB3 has also been found to localize to the mitochondrial inner membrane to interact with Complex I and suppress mitochondrial ROS generation.

Elevated SERPINB3 expression correlates with resistance to platinum combined treatment in non-small cell lung carcinoma and poor prognosis of anthracyclin based chemotherapy in breast cancer. Suppression of SERPINB3 using antisense RNA or short-hairpin RNA leads to decreased growth of a SCC cell line and a number of breast and pancreatic cancer cells. Nonetheless, detection methods with better specificity and higher sensitivity are needed for a more empirical practice of using SERPINB3 as biomarkers [1].

Conclusion

These results suggest that SERPINB3 may be a potential prognostic marker for prostate cancer and that the down-regulation of SERPINB3 may be a therapeutic target in the suppression of prostate cancer growth.

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11 maggio 2018

15:00 - 16:30

sala Baglioni

Comunicazioni 4 - Carcinoma Renale

Moderatori: GIUSEPPE DI GIOVACCHINO, FRANCESCO CURTO, CARLO INTROINI

1. ONCOCYTIC PAPILLARY RENAL CELL CARCINOMA (OPRCC): A CASE REPORT

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Objective

Papillary renal cell carcinoma (PRCC) is the second most commonly encountered morphotype of renal cell carcinoma (RCC). PRCC is a malignant tumour derived from renal tubular epithelium: traditionally classified into type 1 and type 2 (1,2). Recently, an oncocytic variant of PRCC has been described (3). We describe a rare case of OPRCC recently underwent our observation.

Materials and Methods

83 years old caucasian man with incidental solid left renal mass, as showed from abdomen US and CT scan, underwent our observation with LUTS without gross hematuria. Particular, CT scan showed a esophitic 47×36 mm upper pole vascularized renal mass. We performed a surgical enucleoresection with nephron sparing approach of the mass.

Results

We have performed a lombotomic left antero-lateral approach to go to a nephron sparing enucleoresection of the mass with hot ischemia by a selective closure of the upper pole arterial branch of the major renal artery. Total operating time has been 120 minutes with no significative blood loss. Not evidence disease at six months after surgery.

Specimen was fixed in 10% formalin buffer solution for 48 hours, then grossly sectioned and slices embedded in paraffin. Slides were stain with Hematoxylin/eosin. Immunohistochemistry was performed of the instrument Dako Omnis (Agilent Technologies, Santa Clara, US) with CD 10 (clone 56C6), Vimentin (clone V9), CD 177 (policlonal), Cytokeratin 7 (clone OV-TL12/30) and P504S/AMACR (clone 13H4) antibodies. Histologically, the tumor showed a papillary pattern; the papillary folds was formed by thin fibrovascular stalk, occasionally contain foamy macrophages, lined by single layer of epithelial cells with abundant granular eosinophilic cytoplasm and round nuclei, grade 2 sec. Vancouver classification. There were hemorrhagic spots and hemosiderothic histiocytes between papillae. No vascular invasion was seen. At periphery, the tumoral cells pushed a subtle fibrous capsula to perinephric fat without true invasion of adipose tissue. Tumoral cells were immunoreactive for CD 10, Vimentin and p504S/AMACR and negative for CD 177 and Cytokeratin 7.

Discussions

Papillary renal cell carcinomas (PRCC) is a well-established subtype of RCC with characteristic gross and histological features and is further subdivided into 2 subtypes, type 1 and 2, for its distinct morphological feature and prognostic implications. Type 1 PRCC consist of small cells with low nuclear grade and a scant amount of cytoplasm arranged in a single layer, whereas type 2 PRCC tumor cells are larger, with abundant eosinophilic cytoplasm, higher nuclear grade, and nuclear pseudostratification. The two types of PRCC also demonstrate different clinical behavior. Patients with type 2 have a poorer prognosis than those with type 1. Therefore, accurate subtyping of PRCC is important for prognosis and proper patient management. Recently, a new histopathologic variant of PRCC named oncocytic PRCC (OPRCC) has been described. It was first reported by Lefevre et al. in 2005 that 10 cases of RCC with the features of prominent papillary architecture, abundant granular eosinophilic cytoplasm and low-grade non overlapping nuclei (3-4).

The majority of patients OPRCC were identified by medical examination and the remaining presented with macroscopic hematuria or lumbar pain. Grossly, tumors were well demarcated and varied from 1.5 to 9 cm in diameter. Microscopically, typical OPRCC has fine papillary structures with delicate fibrovascular cores, lined with a single layer cell with large, deeply eosinophilic granular cytoplasm and round or polygonal-shaped nucleus exhibiting low nuclear grade in 10 cases (WHO/ISUP grade I-II). Most cases possessed hemosiderin-laden and foam-like cells. Focal necrosis presented. Immunohistochemically, the

majority of tumors presented high expression rates of alpha-methylacylCoA racemase (AMACR), CD10 and vimentin, which were similar to type 2 PRCC. The immune markers including cytokeratin-7 (CK7), KSP-cadherin and EMA exhibited variable positive immunostaining. Genetically, FISH analysis demonstrated trisomy of chromosome 7 and trisomy of chromosome 17 in OPRCCs (5).

Conclusion

OPRCC is a PRCC variant with type 1 and type 2 histological patterns (1). Literature review shows only one case of disease related dead (3). A slow malignancy profile. It represents, otherwise, an important differential diagnosis element in urological clinical practice (2).

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2. ACCURACY OF MAGNETIC RESONANCE IMAGING (MRI) TO IDENTIFY PSEUDOCAPSULE INTEGRITY IN RENAL TUMORS

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Objective

Small renal masses detection is increasing with the use of cross-sectional imaging and the desirable treatment, when technically feasible, is nephron sparing surgery (NSS).

A pseudocapsule (PC) surrounds most masses and a method to identify its integrity would aid to keep a safe surgical margin improving excisional precision.

To evaluate MRI likelihood scale of detection of renal tumor PC infiltration.

Materials and Methods

From January 2016 to September 2017, 58 consecutive patients with renal masses were enrolled in the study. Exclusion criteria included gross hematuria. All patients underwent MRI prior to tumor surgery. Data were collected in a prospective maintained dataset. The patients underwent MRI exams using high resolution protocol including morphological sequences (T2 & T1 imaging), Diffusion MRI (DWI) and Dynamic Contrast Enhanced MRI (DCE).

Two experienced Radiologists evaluated the MRI based on a predefined algorithm in advice with Urologists, and applied a score to tumor PC (MRIpC): MRIpC1) intact and continues; MRIpC2) infiltrated and uninterrupted; MRIpC3) infiltrated and interrupted; NoMRIpC) absent PC.

Figure 1.

Similarly, two experienced pathologists reported PC integrity according to the Renal Tumor Capsule Invasion Scoring System (i-Cap).

The MRIpC score was compared to histology.

Results

There is no standardization in terms of semiotics MRI. On MRI, a PC was described in 45 cases and confirmed at pathology. It was absent in 3 cases (all ccRCC). In 1 patient, a very thin PC was identified at pathology and not reported on MRI (pT3a G3 renal cell carcinoma). On MRI, the PC was intact in 28 cases, infiltrated in 9, disrupted in 14 and absent in 7 cases.

On pathology, a correlation between MRI and i-Cap was found in 53 lesions (91.4%).

The PC disruption was observed at the same level reported on MRI images.

Sensitivity and specificity were 97.92% and 60%, respectively. PPV and NPV were 92.16% and 85.71 %.

Absence and interruption of the PC and tumor volume correlated with high grade disease (G3-G4).

Discussions

Standard NSS requires a minimal layer of normal-appearing parenchyma.

Nevertheless tumor enucleation showed excellent results in the treatment of pT1 renal tumors.

A detailed preoperative identification of PC integrity can drive indications to NSS versus enucleation.

Our findings show how preoperative MRI can identify PC status.

Measuring the length of the integral PC and knowing where to expect an interruption/invasion, we can have an imaging-guided landmark to figure out where a minimal margin could be oncologically safer.

Conclusion

Our findings show how preoperative MRI can identify PC status helping optimizing surgical procedures selection.

3. 68GA-PSMA-HBED-CC PET AS NEW IMAGING BIOMARKER OF RENAL CANCER

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Objective

RCC is a potentially lethal cancer with aggressive behaviour, and has a propensity for distant metastatic spread.

Up to one-third of patients with newly diagnosed RCC have metastatic diseases [1].

Furthermore, more than 30% of patients with localized disease will develop metastases after nephrectomy, and have a poor 5-year survival rate below 10% [2].

The earlier detection of metastases can offer more opportunities to act early and elicit a better therapeutic effect, especially when the metastatic lesion is confined and isolated. Conventional imaging procedures for staging and restaging of RCC patients commonly consist of computed tomography, MRI, and bone scintigraphy.

Positron emission tomography (PET)/CT is a powerful noninvasive tool used for characterizing solid tumors. Currently, clinical PET imaging for metastatic RCC is primarily obtained through metabolic imaging with Fluorodeoxyglucose (FDG)-PET/CT used for staging and assessing treatment response [3].

For the clear cell subtype (ccRCC), there is growing interest in non-FDG molecular imaging agents that may have greater sensitivity and specificity and may potentially add phenotypic information for patient/tumor-specific treatment strategies.

Prostate specific membrane antigen (PSMA) is a 750 amino acid, type II transmembrane glycoprotein that has been shown to be over-expressed in both prostate cancer cells and the vasculature of solid tumours [4].

PSMA is highly expressed in the proximal tubules of normal kidney tissues, and specifically in the neovasculature of ccRCC (75%), chromophobe (31%), oncocytoma (53%) and transitional cell carcinoma (21%) [5].

Due to the enzymatic activity of PSMA it was possible to develop specific inhibitors from which "small molecule" radiopharmaceuticals were derived. Recently methods have been developed to label PSMA ligands with 68Ga enabling PET/CT imaging to detect prostate cancer by targeting the extracellular domain of PSMA.

The most widely used PSMA-ligand for PET-imaging in Europe is a 68Ga-labelled PSMA inhibitor Glu-NH-CO-NH-Lys(Ahx)-HBED-CC ([68Ga]-PSMA-HBED-CC).

In this study, we evaluate the diagnostic potential of [68Ga]-PSMA-HBED-CC PET/CT (PSMA-PET/CT) in restaging patients with ccRCC.

Materials and Methods

Ten patients with ccRCC were submitted to PSMA-PET/CT exam In order to verify the real staging of the disease or for inconclusive results of conventional imaging.

Synthesis of [68Ga]-PSMA-HBED-CC was performed using a fully automated module (Scintomics GRP®, Fuerstenfeldbruck, Germany) and 68Ga was obtained from a IGG100 68Ge/68Ga generator (Eckert & Ziegler, E&Z, Berlin, Germany). Our method to assess the radiochemical and chemical purity of [68Ga]-PSMA-HBED-CC was previously validated [6-7]. The mean yield of labelling reaction was 65.53% and the radiochemical purity 99.90%.

Whole body PET/CT was acquired, from vertex to medium thigh of the femur. 60 min after i.v. injection of [68Ga]PSMA-HBED-CC (150 MBq) on a hybrid scanner Discovery IQ (GE Healthcare). In all patients, a non-diagnostic CT was acquired for attenuation correction.

Tracer uptake was evaluated using spherical volumes of interest (VOIs) semi-automatically drawn on orthogonal planes. For each study maximum standardized uptake value (SUVmax) was recorded for each lesion.

Results

PSMA-PET/CT detected multiple areas of avid tracer uptake in 7 pts with mean SUVmax 46,4 (range 21-114). PSMA-PET/CT revealed greater disease extension in comparison with CT in the same anatomic context (i.e. bone, lymphnodes). Moreover, PSMA-PET/CT detected occult metastatic lesions in 4 pts not revealed by conventional imaging in thyroid, bone, cerebellum, adrenal gland, lung.

In 1 patient PSMA-PET/CT demonstrated an unknown single brain metastatic lesion that was submitted to IGRT with complete remission.

Discussions

ccRCC is the most common (70–90%) and more aggressive RCC than other common histological types such as papillary and chromophobe. Increased angiogenesis by ccRCC can be utilised to potentially improve staging using PSMA-targeted imaging technologies as PET/CT. We show that PSMA-PET/CT may identify small metastatic lesions not obvious on routine imaging.

In general, clear-cell RCC metastases are depicted with high visual contrast in various anatomic sites including the lung, pleura, bone and lymph nodes.

There is growing interest in molecular imaging agents that may have greater sensitivity and specificity and may potentially add phenotypic information for the tailoring of individualized targeted-therapies. In this context, PSMA-PET/CT has emerged as a promising, more accurate method. The multidisciplinary context of the PCa Unit allows appropriate utilization of complex diagnostic tools as PSMA-PET/CT directly connecting disease assessment and treatment planning decisions.

Conclusion

In our patients, PET/CT with [68Ga]-PSMA-HBED-CC demonstrated high in vivo PSMA expression in ccRCC metastatic lesions improving diagnostic sensitivity by detection of occult lesions at the conventional imaging (thyroid, adrenal gland) and real assessment of disease burden.

Moreover, PSMA-targeted imaging may potentially be used to predict and/or assess response to systemic therapy.

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4. ROLE OF INTERACTIONS AMONG ARG TYROSINE KINASE, TGFβ1 AND LYSYL OXIDASE IN CCRCC PROGRESSION

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Objective

Bone metastases develop in about 30% of ccRCC patients and an involvement of TGFβ1 in promoting the development of these metastases has been described (1). In breast cancer the extracellular matrix modifying enzyme Lysyl oxidase (Lox) has a key role in formation of pre-metastatic bone lesions through osteoclast activation and osteoblast inhibition (2). Our recent data evidenced that Lox is overexpressed in ccRCC (3) and TGFβ1 production is modulated by Arg tyrosine kinase in human renal tubular cells under high glucose conditions (4). Arg is also involved in modulation of invasion and metastasis in breast and prostate cancer through the induction of invadopodia, the cytoskeletal protrusions used by carcinoma cells to invade matrix during metastatic process (5). All these data suggest that Arg, TGFβ1 and Lox might be molecularly and functionally related to promote tumor invasion and metastasis. The aim of our study was to analyse the molecular and functional interactions among Arg, TGFβ1 and Lox in ccRCC and to evaluate their impact on osteoclast- and osteoblast- dependent formation of pre-metastatic bone lesions. Our study took advantage of an in vitro model of ccRCC primary cell cultures and cell lines.

Materials and Methods

Primary cell cultures, obtained from specimens of ccRCC and matched normal renal cortex, were characterized by FACS analysis. 786-O and Caki-1 ccRCC, Raw264 macrophage and MC3T3-E1 osteoblast cell lines were also used. ccRCC cell lines were treated with 5-10 ng/ml TGFβ1 or with Arg siRNA with or without the TGFβ-receptor inhibitor SB431542. The osteoclastic differentiation/activation of Raw264 cells and the proliferation of MC3T3-E1 osteoblasts was evaluated after treatment with conditioned media of Arg-silenced ccRCC cells by TRAP staining and MTT assay, respectively. Arg, TGFβ1-precursor, phospho-Smad2 and Smad2/3 protein expression was evaluated by Western blot, Lox and TGFβ1 in culture media by ELISA.

Results

TGFβ1 and Lox were significantly more abundant in media of high-grade ccRCC primary cultures than in those of low-grade ccRCC and normal cortex. Arg protein was upregulated in low-grade with respect to high-grade ccRCC primary cultures. Even in ccRCC cell lines the expression of Arg and TGFβ1 were inversely correlated. Treatment of ccRCC cell lines with TGFβ1 induced an activation of Smad pathway and an increase of Lox secretion. Moreover, Arg silencing in ccRCC cells increased TGFβ1 secretion and activated Smad pathway. We are now evaluating Lox secretion after treatment of Arg-silenced ccRCC cells with SB431542 as well as Raw264 cell activation and MC3T3-E1 cell proliferation after treatment with Arg-silenced ccRCC cell conditioned media.

Discussions

Our data highlighted that Arg expression is inversely correlated with TGFβ1 and Lox production in high-grade ccRCC cultures and cell lines accordingly with an expected more invasive and metastatic behaviour. Moreover, the effects of TGFβ1 treatment and Arg silencing in ccRCC cell lines suggest an involvement of Arg in regulation of TGFβ1 secretion that, through Smad pathway activation, induced Lox secretion. The eventual osteoclast activation and osteoblast inhibition induced by Arg-silenced ccRCC cell conditioned media, if confirmed by our ongoing analyses, might suggest that the complex interactions among Arg, TGFβ1 and Lox are important also for bone pre-metastatic niche formation.

Conclusion

The evidence of complex functional interactions among Arg, TGFβ1 and Lox may help to shed light on the molecular mechanisms responsible for ccRCC progression and bone pre-metastatic niche formation.

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5. ICG MARKED OFF-CLAMP ROBOTIC PARTIAL NEPHRECTOMY FOR ENDOPHYTIC RENAL TUMORS: PROOF OF CONCEPT AND INITIAL SERIES

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Objective

Partial nephrectomy for endophytic renal tumors is a challenging surgical procedure. The use of intraoperative ultrasound allows the surgeon to localize the tumor and to score the resection margins, without any data about the deep part of resection. We describe a novel technique to mark endophytic renal tumors with transarterial superselective delivery of indocyanine green (ICG)-lipiodol mixture, in patients selected for purely off clamp (OC) robotic partial nephrectomy (RPN).

Materials and Methods

Between September 2017 and October 2017, 10 consecutive patients with predominantly or totally endophytic renal masses underwent superselective transarterial tumor ICG marking and bland embolization immediately before OC-RPN. Preoperative transarterial bland embolization was performed with superselective delivery of lipiodol-ICG mixture (1 to 2 by volume, mixing 1.5 millilitres of ICG with 3 millilitres of lipiodol) into tertiary order arteries feeding the tumor. Purely OC-RPN was performed. Near infrared fluorescence imaging was used to early identify the tumor (Fig. 1A), to score resection margins (Fig. 1B) and to obtain an image guided control of resection margins (Fig. 1C). Baseline, clinical, perioperative and pathologic data were reported.

Results

Median tumor size was 3 cm (IQR 2.3-3.8). Median PADUA nephrometry score was 10 (IQR 9-11). Median operative time was 75 minutes (IQR 65-85), median estimated blood loss was 250 mL (IQR 200-350). Bland embolization was uneventful in all patients. Hilar clamp was not necessary in any case, as well as no conversion to radical nephrectomy was needed. Perioperative course was uneventful for all patients and median hospital stay was 3 days (IQR 2-3). At discharge, median Hgb and percent eGFR drop down were -3.3 g/dL (IQR 2.1-3.3) and -11% (IQR 10-20), respectively. Surgical margins were negative in all cases. Eight (80%) patients had renal cell carcinoma histology at final pathology.

Discussions

We previously reported our experience with off-clamp partial nephrectomy with preoperative superselected transarterial embolization [1]. We describe a novel technique to simplify challenging RPNs based on ICG-lipiodol tumor marking with preoperative superselective bland embolization. Key benefits of this technique include a quick identification of the mass, avoiding any use of intraoperative ultrasound imaging, and a real time control of resection margins thanks to an improved visualization of tumor.

Conclusion

The technique we described may simplify challenging RPNs, thanks to a quick identification of the mass, avoiding any use of intraoperative ultrasound imaging, and a real time control of resection margins thanks to an improved visualization of tumor.

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6. TRIFECTA AND PENTAFECTA RATES AFTER ROBOTIC PARTIAL NEPHRECTOMY: SAFETY AND FEASIBILITY IN RENAL MASSES ≥ 4 CM

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Objective

Robotic Assisted Partial Nephrectomy (RAPN) is preferred to radical nephrectomy because it guarantees superior functional outcomes in patients with small renal masses (RMs). Only a few studies so far have evaluated the feasibility of RAPN for the treatment of RMs ≥ 4 cm (1).

The aim of this study is to evaluate the safety and feasibility of RAPN based on a comparison of trifecta and pentafecta rates for RMs ≥ 4 cm.

Materials and Methods

We retrospectively analyzed prospective collected data from an institutional database of patients undergoing RAPN from September 2013 to November 2016. Demographic and perioperative data were collected and statistically analyzed. Pentafecta is defined as achievement of trifecta (negative surgical margins, no postoperative complications and warm ischemia time ≤ 25 min) with the addition of two other variables, namely, over 90% estimated Glomerular Filtration Rate (eGFR) preservation and no chronic kidney disease stage progression 1 year after surgery.

Results

Overall, 123 patients underwent RAPN. Of those, 38 (30.9%) had RMs ≥ 4 cm. These patients were more frequently symptomatic at diagnosis (23.7 vs 8.2%, $p=0.03$) and had high PADUA scores (13.2 vs 3.5%, $p=0.02$). As expected, patients with RMs ≥ 4 cm had longer OT (133.4 vs 105.9 minutes, $p<0.01$), higher EBL (287.4 vs 166.3 ml, $p<0.01$), and more frequently showed WIT >25 min (0% vs. 26.3 %, $p<0.01$). Mean pathologic tumor size was 2.4 cm in patients with RMs smaller than 4 cm and 4.8 in those with RMs larger than 4 cm. In our study, no significant differences in post-operative complications were found between these two groups. Overall, trifecta and pentafecta were achieved in 64.2% and 19.5% of cases, respectively. When patients were stratified according to tumor size, trifecta was achieved in 72.9% of those with RMs <4 cm and in 44.7% of those with RMs ≥ 4 cm, whereas achievement rates for pentafecta were 23.5% and 10.5%, respectively. In logistic regression models, patients with RMs ≥ 4 cm

were less likely to achieve trifecta ($p < 0.01$); however, $RM \geq 4$ cm were not associated with lower pentaecta rates ($p = 0.08$). On multivariable regression analysis, no significant predictive factors were found in connection with trifecta, whereas with regard to pentaecta the only significant predictor was age (OR: 0.91; 95%CI 0.85-0.98; $p = 0.01$).

Discussions

We hypothesized that RAPN would be a safe and reliable procedure even in patients with RMs larger than 4 cm. We also hypothesized that achievement of trifecta and pentaecta, as surrogate markers of surgical success as well as of short- and long-term functional outcomes, would be similar for RMs smaller or larger than 4 cm treated with RAPN. Our data overlap favorably with data available in the literature. As regards perioperative complications after RAPN for larger RMs, data from the literature are controversial. Patel and Ficarra reported higher complications rates for tumors > 4 cm, than for tumors < 4 cm (26.6 vs 8.9% and 26.5 vs 9.4%, respectively) (2-3). In a multicenter study, Petros et al. analyzed data of 445 patients, 83 of whom had RMs > 4 cm, and found no increased risk of perioperative complications after RAPN (4). In our study, patients with RMs smaller or larger than 4 cm had similar perioperative complication rates, again with no significant differences ($p = 0.37$). Likewise, no significant differences were recorded in connection with post-operative 90% eGFR preservation in RMs < 4 or ≥ 4 cm ($p = 0.38$). To the best of our knowledge, only Kim et al examined differences in trifecta and pentaecta rates in patients with pT1a and pT1b tumors. In their study, 65.3% of pT1a patients and 43.3% of pT1b patients achieved trifecta, while pentaecta was achieved by 38.3% of pT1a patients and by 26.7% of pT1b patients (1). Our results corroborate data from the literature, with overall trifecta and pentaecta rates being achieved in 64.2% and 19.5% of cases, respectively.

Conclusion

RAPN is a feasible and safe procedure with good long-term renal outcomes even for patients with large renal masses (≥ 4 cm). Trifecta and pentaecta are important tools for evaluating both short- and long-term perioperative and functional renal outcomes.

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7. ON-CLAMP VERSUS OFF-CLAMP PARTIAL NEPHRECTOMY: PROPENSITY SCORE MATCHED COMPARISON OF LONG TERM FUNCTIONAL OUTCOMES

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Objective

To compare renal functional outcomes after either off-clamp (Off-C) or on-clamp (On-C) PN in patients with cT1-2/N0 M0 renal tumors and baseline estimated eGFR > 60 ml/min.

Materials and Methods

A prospective 'renal cancer' database of two high volume centers was queried for cT1-2/N0/M0 tumors and baseline eGFR > 60 mL/min. Overall 1073 patients met the inclusion criteria, 588 On-C PN and 485 Off-C PN. A 1:3 propensity score-matched (PSM) analysis was employed to minimize the potential selection bias.

Joinpoint regression analysis was used to plot the 2 to 8 yrs probabilities of experiencing eGFR decreases of 0%, $< 25\%$ and between 25 and 50% in both PSM cohorts and, therefore, to compare the trends for each of these 3 subgroups.

Kaplan-Meier method was used to compare the risk of developing a CKD stage $\geq 3b$ during follow-up in the PSM cohorts. Univariable and multivariable analyses were performed to identify independent predictors of developing a CKD stage $\geq 3b$.

Results

In the whole cohort On-C patients were significantly younger ($p = 0.001$), less frequently smokers ($p = 0.01$), with a lower incidence of diabetes ($p = 0.001$) and hypertension ($p = 0.001$), lower ASA scores ($p < 0.001$), higher baseline eGFR values ($p = 0.003$), smaller tumor sizes ($p < 0.001$), longer warm ischemia time (17 minutes vs 0, $p < 0.001$) and higher incidence of positive surgical margins ($p = 0.021$). After applying the PSM analysis, the two cohorts of 157 On-C and 471 Off-C PN cases did not differ for all clinical and pathologic covariates (all $p > 0.08$), except for mean warm ischemia time ($p < 0.001$).

At Joinpoint regression analysis Off-C group displayed significantly higher probabilities of maintaining unmodified eGFR after surgery ($p = 0.02$), and significantly lower probabilities of experiencing eGFR decrease $> 25\%$ in the first 8-yr follow-up ($p = 0.02$). The probability of developing a CKD stage $\geq 3b$ was significantly higher (log rank $p = 0.006$) in the On-C cohort (2, 5 and 8yr risk 0.9%, 5.1% and 12.8% versus 0.6%, 1.2% and 1.2% in the Off-C cohort, respectively).

At multivariable Cox regression analysis, eGFR at discharge (HR 0.94; 95% CIs 0.91-0.98, $p = 0.002$) and Off-clamp approach (HR 7.33; 95% CIs 1.8-29.4, $p = 0.005$) were independent predictors of improved renal functional outcomes.

Conclusion

Off-C PN is associated with a significantly higher probability of maintaining 100% eGFR after surgery compared with On-C PN in patients with cT1-2/N0/MO renal tumors and good baseline renal function candidate to elective PN. Patients treated with On-C PN had a 7.3 fold increased risk of developing a severe CKD during follow-up.

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8. SURGICAL OUTCOMES AND PERIOPERATIVE MORBIDITY OF CLAMP VS OFF-CLAMP LAPAROSCOPIC PARTIAL NEPHRECTOMY

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Objective

Nephron sparing surgery (NSS) is now reference standard for many T1 renal tumors. To reduce renal damage several technique have been proposed; cold ischemia, artery clamping, selective artery clamping, zero ischemia. We retrospectively compared perioperative results of clamp vs no clamp procedure in patients affected by T1 renal cancer.

Materials and Methods

From database of our institution we reviewed patients affected by single, clinical T1 tumor who underwent a laparoscopic partial nephrectomy (LPN). A transperitoneal approach was performed in all patients. In Clamp LPN group renal artery was clamped using laparoscopic Bull dog. In off-clamp group, a controlled hypotension, to carefully lower the mean arterial pressure (MAP) while maintaining excellent systemic perfusion, was maintained at approximately 60 mmHg. To induce hypotension, the doses of inhalational isoflurane was increased. The renal lesion was excised using cold endoshears. Parenchyma was repaired with Vicryl™ sutures arrested with absorbable clips and Hem-O-lok™. In clamp group bulldog was removed while in the off-clamp group blood pressure was restored to preoperative levels. Biologic hemostatic agents and Surgicel™ were applied to the resection bed when appropriated.

Results

We identified 59 patients in the clamp group and 67 in off-clamp group; baseline characteristic of the two groups are described in table 1. Patients of off clamp group presented significant less operative time, blood loss and transfusion rate than clamp group. Hospitalization and suture time were shorter for off-clamp group, also [table 2]. No significant differences were observed in terms of histological evaluation [table 3]. Postoperative complication were rare [table 4].

Table 1. Baseline characteristics	Clamp group	Off clamp group	p value
pts n	59	67	
Age (y) y	59.8 ± 13.6	58.4 ± 12.4	0.57
BMI	28.5 ± 4.6	27.8 ± 5.3	0.56
cTumor size mm	40.5 ± 11.7	42.7 ± 15.4	0.41
pTumor size mm	44.7 ± 16.4	41.3 ± 16.0	0.40
ASA (%) I	6.1	5.9	0.56
II	39.4	47.1	
III	51.5	45.1	
IV	3.0	1.9	
RENAL (%) Low	17.0	20.3	
Medium	57.6	72.5	
High	25.4	7.2	

Table 2. operative outcomes	Clamp group	Off clamp group	p value
Operative time min.	214.5 ± 56.6	147.6 ± 54.7	0.001
Resection time min.	6.9 ± 2.9	8.5 ± 4.6	0.46
Suture time min.	16.3 ± 7.3	9.6 ± 6.4	0.006
Blood loss min.	747.4 ± 706.3	357.1 ± 340.4	0.001
Hb drop gr/dl	2.3 ± 1.7	2.1 ± 1.1	0.51
Transfusion (n) 0	33	58	0.002
1	13	3	
2	5	5	
3	8	0	
Hospitalization Days	10.2	7.4	0.03

Table 3. Histological outcomes		Clamp group	Off clamp group	p value
Type	RCC	38	34	
	Cromophobe	1	5	
	Papillary	6	12	
	unclassifiable	1	1	
	Oncocytoma	6	9	
	AML	3	3	
	Benign	4	3	
Stage n (%)	T1a	26 (56.5)	25 (48.1)	0.87
	T1b	15 (32.6)	20 (38.5)	
	T2	1 (2.2)	2 (3.8)	
	T3a	4 (8.7)	5 (9.6)	
+ve surgical margins		1 (1.7%)	0	

Tab 4. Perioperative complications	Clamp group	Off clamp group
haemorrhage	2 (3.4%)	0
Diaphragmatic lesion	2 (3.4%)	1 (1.5%)
Urine leakage	3 (5.1%)	2 (3.0%)
Pnx	1 (1.7%)	0
fever	2 (3.4%)	5 (7.5%)

Conclusion

Clamp and off-clamp laparoscopic partial nephrectomy are equally safe and reproducible technique in terms of perioperative outcomes and complications. However the appropriate procedure should be selected taking into account tumor complexity, patient comorbidity and surgeon experience.

9. CLAMPLESS LAPAROSCOPIC PARTIAL NEPHRECTOMY: PRELIMINARY EXPERIENCE

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Objective

Nephron sparing surgery is now reference standard for many T1 renal tumors. Although hilar clamping creates bloodless operative field, it necessarily imposes kidney ischemic injury. "Zero ischemia" partial nephrectomy allows to eliminate ischemia during nephron sparing surgery. We report our preliminary experience of "zero ischemia" laparoscopic partial nephrectomy realized by controlled hypotension.

Materials and Methods

Patients with a single, clinical T1 tumor were candidates for "zero ischemia" laparoscopic partial nephrectomy. High-risk patients with severe, preexisting, cardiopulmonary, cerebrovascular, or hepatorenal dysfunction were not eligible. The preoperative work-up comprised medical history, physical examination, routine laboratory tests and CT scan or MRI. A transperitoneal approach was performed in all patients; four or five laparoscopic ports are inserted. The hilar vessels are prepared in event that bulldog clamping may subsequently be needed. Intraoperative monitoring includes electrocardiogram, central venous pressure (CVP), electroencephalographic bispectral (BIS) index (BIS monitor™), NICOM (non invasive cardiac output monitoring), urinary Foley catheter. A controlled hypotension, to carefully lower the mean arterial pressure (MAP) while maintaining excellent systemic perfusion, is maintained at approximately 60 mmHg. To induce hypotension, the doses of inhalational isoflurane is increased. The renal lesion is excised using cold endoshears. Upon completion of tumor excision, blood pressure is restored to preoperative levels. Parenchyma is repaired with Vicryl™ sutures arrested with absorbable clips and Hem-O-lok™. Biologic hemostatic agents and Surgicel™ are applied to the resection bed.

Results

85 patients affected by renal tumor underwent zero ischemia LPN. Mean age and mean BMI were 58.2 (±12.2) years and 27.8 (±5.3). ASA score was 1, 2 and 3 in 5, 47 and 48 patients, respectively. Charlson comorbidity index was 3.2±1.6. Renal score was low (4-6) in 20.5%, moderate (7-9) in 71.8% and high (10-12) in 7.75% of the patients. Mean tumor size was 42.9 mm (±15.4). Operative time, blood loss, ΔHb were 148.7 min (±54.9), 374.2 ml (±365.5), 2.1 gr/dl (±1.2), respectively. Hilar vessels were isolated in 44.2%. In all cases the procedure was performed without clamping. Resection, first and second suture times were 7.9 (±3.9), 9.6 (±6.4) and 7.3 (±3.2) minutes, respectively. Hospital stay was 6.5 (±5.6) days. Postoperative complications were: 5 fever (Clavien I), 1 fever (Clavien II), 3 urine leakage managed conservatively (Clavien IIIa). Histological evaluation revealed benign lesion in 4 pts, Oncocytoma in 10 pts, AML in 4 pts, complex cyst in 1 pts, Papillary RCC in 14 pts, Cromophobe RCC in 5 pts, clear cell RCC in 47 pts [pT1a (31 pts), pT1b (25 pts), T2 (2 pts), T3a (7 pts)]. Preoperative and postoperative serum Creatinine was 0.8 ±0.24 and 0.9 ±0.22, respectively (Δ0.05±0.08; Δ% -6.2); Preoperative and postoperative GFR was 96.43 ±33.03 and 88.03 ±26.35, respectively (Δ-8.41 ±12.97 Δ% -8.7).

Conclusion

Zero ischemia LPN represents a safe and reproducible technique that allow to sparing renal parenchyma and preserve renal function. However long-term results are needed.

10. CLAMPLESS LAPAROSCOPIC PARTIAL NEPHRECTOMY VERSUS LAPAROSCOPIC RADICAL NEPHRECTOMY: A CHALLENGE IN TRANSFUSION IN OUR 9 - YEAR EXPERIENCE

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Objective

Laparoscopic partial nephrectomy is indicated for the treatment of small renal tumors due to its miniinvasiveness and good results in matter of nephron sparing using "zero-ischemia" technique, with the aim of completely eliminate surgical renal ischemia (1-2). Aim of the study is evaluating the incidence of blood transfusion in comparing laparoscopic radical versus partial nephrectomy, in order to propose the technical feasibility and safety of partial procedures.

Materials and Methods

Clampless laparoscopic partial nephrectomy (cl-LPN) technique was performed with no selective branch micro-dissection of renal artery/vein, and no calibrated and timed intraoperative controlled hypotension. No intraoperative controlled hypotension was performed during laparoscopic radical nephrectomy (LRN). Match analysis between surgical and transfusional data was performed. We evaluated retrospectively 147 clampless laparoscopic partial nephrectomies (cl-LPN) versus 247 laparoscopic radical nephrectomies (LRN) performed from January 2008 till December 2016. Patients aged 23 - 87 and 31 - 91 years for cl-LPN and LRN respectively.

Results

13 patients out of 147 clampless laparoscopic partial nephrectomies (8.8 %) versus 27 patients out of 247 (10.9%) LRN needed blood transfusions during hospitalization: 4 out of 13 (30 %) transfusion of the cl-LPN were performed after the early 12 hours postsurgery versus 6/27 (22 %) of the radical nephrectomies: no statistically significant difference was noted between the two groups. Otherwise a statistically significant difference was noted in the need of blood transfusion between cl-LPN undergone before 2010 versus those after 2010: 7/36 (19.4 %) versus 6/111 (5.4 %) respectively ($p < 0.05$).

Discussions

Clampless laparoscopic partial nephrectomy had the same incidence of transfusion as the radical ones. Our data underlined that there is no increased risk of bleeding using laparoscopic partial technique versus laparoscopic radical technique. Technical approach is very different and quite opposite: in radical procedures first of all renal vessels were identified, isolated, clamped and cut; in the partial technique first of all the renal lesion is identified, isolated and enucleated: no preventive dissection of the renal hilum was usually performed, unless in case of renal lesion located near the hilum itself. As paradox, maintaining an adequate blood pressure during surgery permits a better evaluation of blood loss in order to perform the best coagulation with bi-polar forceps, after the cold enucleation of the lesion by the scissors.

Furthermore we had to consider that 30 % of the cl-LPN and 22 % of LRN were delayed transfusion 12 hours after surgery, demonstrating only a mild vascular leakage without the need of a surgical second look.

If LRN can be considered a relatively "blood sparing" safe procedure, the same we can affirm for clampless laparoscopic partial nephrectomy. A progressive decrease of the need of transfusion was noted during the observed period: this can be due both to the increasing ability of the surgeon and in the use of different hemostatic agent.

Conclusion

Clampless laparoscopic partial nephrectomy is a feasible technique in nephron sparing and even in "blood sparing" purpose, avoiding renal functional damage due to ischemia.

Reference

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11. IMPACT OF LEARNING CURVE ON PERIOPERATIVE OUTCOMES OF OFF-CLAMP MINIMALLY INVASIVE PARTIAL NEPHRECTOMY: PROPENSITY SCORE MATCHED COMPARISON OF OUTCOMES BETWEEN TRAINING VERSUS EXPERT SERIES

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Objective

Minimally invasive (MI) Off-Clamp partial nephrectomy (OC-PN) is a challenging surgical procedure. Training programs in this specific surgical field are difficult to realize due to the significant risks of intraoperative bleeding with potential impact on achieving negative surgical margins. The aim of this study was to compare perioperative outcomes of patients treated with MI-OC-PN by either a training or an expert surgeon in the same Institution.

Materials and Methods

The prospectively maintained "renal cancer" database was queried for "off-clamp, minimally invasive, partial nephrectomy". Overall, data of 372 patients treated between January 2015 and September 2017 were collected. A 1:2 propensity score matched (PSM) analysis was used to generate two populations homogeneous for the following variables: patient demographics (age, gender, BMI); ASA score; tumor size; PADUA nephrometry score; preoperative hemoglobin, preoperative eGFR. Exclusion criteria for propensity score analysis included multiple tumors (17), preoperative estimated glomerular filtration rate (eGFR)

<30 ml/min (14), lacking PADUA score (26), single setting multiple surgeries (9), leaving 286 control cases in the expert cohort available for selection. Perioperative outcomes of first 20 patients treated by the training surgeon were compared against 40 PSM selected patients treated by an expert surgeon who have previously performed more than 1000 OC-PN. The training surgeon had previously performed more than 200 minimally invasive prostatectomies and 45 laparoscopic radical nephrectomies.

Results

Patients treated by the expert surgeon had significantly larger tumors (4.1 vs 2.9, $p=0.007$), lower incidence of low (≤ 7) PADUA nephrometry scores (30.1% vs 60%, $p=0.029$) and higher incidence of comorbidities (ASA score 3-4 27.3% vs 5%, $p=0.03$). After applying the PSM, the two cohorts were homogeneous for all preoperative variables (all $p>0.18$, Table 1). Patients treated by training surgeon had higher hemoglobin at discharge (12.4 vs 11.4 g/dL, $p=0.03$) and significantly lower incidence of transfusion rates (0 vs 10%) but comparable incidence of hospital stay (4.9 vs 4.6 d, $p=0.71$), severe complications according to Clavien classification system (5% vs 5%), positive surgical margins (0% vs 2.5%, $p=0.47$) and eGFR at discharge (78.6 vs 73.4 mL/min, $p=0.49$, Table 2). Hilar clamping was never necessary in both selected cohorts (0% vs 0%, $p=1.00$).

Discussions

Minimally invasive (MI) Off-Clamp partial nephrectomy (OC-PN) is a challenging surgical procedure, with concerns about surgical training [1]. The impact of learning curve on outcomes of MI-OC-PN is negligible after completion of a proper training in minimally invasive surgery.

Conclusion

The impact of learning curve on outcomes of MI-OC-PN is negligible after completion of a proper training in minimally invasive surgery.

Reference

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12. BILATERAL SYNCHRONOUS RENAL CANCER: THERAPEUTIC STRATEGIES AND "EXTREME KIDNEY SURGERY"

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Objective

Renal cancer represents 3% of all cancers and in 1-2% of cases it is bilateral. Bilateral outset may be a sign of the presence of genetic syndromes predisposing to this cancer, such as Von Hippel-Lindau syndrome, Cowden syndrome, family renal carcinoma syndrome, Birth-Hogg-Dubè syndrome, renal hereditary papillary carcinoma syndrome, Tuberous Sclerosis (1).

Today, the treatment of bilateral renal cancers is a challenge that aims to cure oncologic disease while preserving renal function as much as possible, using nephron-sparing techniques and non-surgical ablation (thermoablation, cryotherapy, radiofrequency), to "extreme kidney surgery" (2,3,4,5). We report our experience in the surgical treatment of 2 patients who have come to our attention with synchronous bilateral renal cancers, in light of recent articles published in the literature.

Materials and Methods

Between July and September 2017 we treated 2 patients with synchronous bilateral renal cancers. Patient M.R., age 51, was affected by left kidney cancer measuring 14 cm in diameter and by right kidney cancer measuring 9 cm in diameter, with suspected pulmonary metastasis. We have chosen to treat cancers in two times: in order to avoid dialysis, first enucleoresection of right renal tumor was performed (without warm ischemia time and controlled hypotension) and then, after approximately one month, left radical nephrectomy was performed. The second Patient, P.G. was affected by left kidney cancer measuring 8,5 x 7 cm in diameter and by two right kidney cancers measuring 3 cm and 5,7 cm in diameter (in addition to multiple cysts). Again, the treatment was performed in two times, to minimize the risk of impaired renal function. We started with enucleoresection of left kidney cancer, a single neoplasm with lower risk of intra and post-operative bleeding (without warm ischemia time and controlled hypotension). After 1 month, we proceeded with the enucleoresection of the double right renal cancers (again without warm ischemia time and controlled hypotension).

Results

Histological examinations in the first patient revealed clear cell carcinoma pT2a (enucleoresection of right renal carcinoma) and clear cell carcinoma pT2b (left radical nephrectomy). In the second patient histological examinations revealed papillary renal carcinoma type I, pT2a (enucleoresection of single left kidney cancer) and papillary renal carcinoma type I on both right kidney cancers treated by enucleoresection, pT1a the smallest and pT1b the largest. None of two patients needed to be treated with intra or postoperative blood transfusion. None of the two patients required postoperative dialysis. The patient subjected to enucleoresection of right kidney cancer and left radical nephrectomy showed a moderate renal function impairment. We currently have a very limited oncological follow-up for both patients.

Discussions

The occurrence of synchronous bilateral renal cancer is rare, but not exceptional. The main goal of treatment is certainly the radical cure for oncologic disease, but another important target is preservation of renal function to avoid dialysis (6). Recent retrospective works about treatment of patients with synchronous bilateral renal cancer exist, but there are no clear guidelines on the type of intervention to be performed and the timing of the interventions themselves in case of two-times interventions.

Conclusion

In case of bilateral renal cancer, treatment planning should take into account size, number and location of the tumours as well as the patient's performance status. If enucleoresection of tumour lesions is executable, nephron-sparing surgery should be considered as a valid therapeutic option even in case of voluminous cancers, in order to avoid postoperative renal function

impairment requiring definitive dialysis. If two times treatment is planned, it is advisable to perform conservative surgery on the "best" kidney first, ensuring an adequate post-operative recovery period before treating the contralateral kidney, without delaying too much second intervention. In case of cancers deriving from suspected hereditary syndromes, patients should be advised to have an oncological genetic examination with personalized follow-up. It would be appropriate to create guidelines for treatment of these types of cancer, in order to ensure more standardized and effective treatment.

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13. ROBOTIC PARTIAL ADRENALECTOMY FOR ALDOSTERONE SECRETING ADENOMAS: INITIAL REPORT FROM TWO TERTIARY REFERRAL CENTERS

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Objective

In the era of minimally invasive surgery, partial adrenalectomy has been certainly underused. We aimed to report on postoperative and early functional outcomes of a two-center robotic partial adrenalectomy (RPA) series.

Materials and Methods

From June 2014 to June 2017 RPA was performed on 10 consecutive patients affected by aldosterone-secreting adenomas. Preoperative, postoperative and early functional outcomes data were prospectively collected and reported.

Results

All cases were completed robotically. Median nodule size was 18,1 mm (range 10-30) (Table 1). Intraoperative blood loss was negligible, postoperative course was uneventful in 9 cases; a single (10%) postoperative Clavien grade 2 complication occurred (fever requiring antibiotics); mean hospital stay was 3,6 days (range 2-13). Patients became normotensive immediately after surgery (mean preoperative blood pressure: 152/93 mmHg; mean postoperative blood pressure: 120/71 mmHg, respectively). None of the patients required further hypotensive treatment (Table 2).

Aldosterone and plasmatic renin activity (PRA) levels decreased and returned within the normal range after surgery (mean post-operative aldosterone: 152 pg/ml [normal range: 17.6-232] and mean post-operative PRA: 2.4 ng/ml h [range: 0.2-2.8], respectively). At one-yr follow-up, all patients were normotensive and hypotensive treatment free.

Discussions

In the era of minimally invasive surgery, partial adrenalectomy has been certainly underused, and adrenal masses are treated through robotic total adrenalectomy [1]. We reported safety and feasibility of robotic partial adrenalectomy for patients with aldosterone-secreting adenomas.

Conclusion

RPA is a safe, feasible and minimally invasive surgical approach. The excellent perioperative and early functional outcomes suggest an increasing adoption of this technique in the near future.

Reference

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14. ROBOT ASSISTED RADICAL NEPHRECTOMY AND INFERIOR VENA CAVA THROMBECTOMY: SURGICAL TECHNIQUE, PERIOPERATIVE AND MID-TERM ONCOLOGIC OUTCOMES

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Objective

Radical nephrectomy with Inferior vena cava (IVC) thrombectomy for renal cancer is one of the most challenging urologic surgical procedures. We describe surgical technique and present perioperative and oncologic outcomes of 23 consecutive cases

of completely intracorporeal robot-assisted radical nephrectomy with IVC level I (17,9%) II (30%) and III (52,1%) tumor thrombectomy.

Materials and Methods

Twenty-three consecutive patients with renal tumor and IVC thrombus were treated between July 2011 and September 2017. Baseline, perioperative and follow-up data were collected into prospectively maintained IRB approved databases. Surgical technique has been previously described. We report perioperative and oncologic outcomes of 23 consecutive patients treated in a tertiary referral center.

Results

All procedures were successfully completed; open conversion wasn't necessary. Median operative time was 300 minutes. Eleven patients (47.8%) did not experience any complication. Ten patients (43,4%) required blood transfusion (Clavien grade 2); one patient (4,3%) had a Clavien grade 3a complication (gastroscopy); one patients (4,3%) had Clavien grade 3b complication (reintervention due to bleeding from adrenal gland); Two patients (8,6%) required ICU admission (Clavien 4a), for PRESS syndrome and atrial fibrillation, respectively. Out of 8 patients who underwent cytoreductive nephrectomy and IVC thrombectomy, at a median follow-up of 19 months (IQR 6-31), 2-yr cancer specific and overall survival rates were 50%. Fifteen patients received surgery with curative intent and 7 of these experienced disease recurrence. three patients died of disease progression; 2-yr disease-free and cancer specific survival rates were 42.1% and 71.5%, respectively.

Discussions

Robotic IVC tumor thrombectomy is feasible for level II-III thrombi [1]. To maximize intraoperative safety and chances of success, a thorough understanding of applied anatomy and altered vascular collateral flow channels, careful patient selection, meticulous cross-sectional imaging, and a highly experienced robotic team are essential.

Conclusion

Robotic IVC tumor thrombectomy has demonstrated to be a feasible and safe surgical procedure in tertiary referral centers. Favorable perioperative outcomes represent a rational base to expand indications also in the cytoreductive setting.

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12 maggio 2018

10:00 - 11:30

sala Visconti

Video 3 - Urocoktail

Moderatori: PAOLO VIGANO', MAURIZIO SIMONE, MARIO KORDIC

sabato 12 maggio 2018

1. SINDROME DI CONN: TRATTAMENTO LAPAROSCOPICO CONSERVATIVO

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SCOPO

Scopo di questo video è presentare "step by step" la tecnica di chirurgia conservativa del surrene in pazienti affetti da [S.me](#) di Conn (adenoma secernente).

MATERIALI E METODI

Con il paziente in decubito laterale si posizionano i trocars secondo lo schema abituale della chirurgia transperitoneale della loggia renale. Si procede, attraverso la medializzazione del colon discendente, all'accesso al retroperitoneo e, previa incisione della fascia di Gerota, all'identificazione della ghiandola surrenalica. Isolamento dei vasi surrenalici, della ghiandola e dell' adenoma che viene asportato mediante l'utilizzo di Ligasure ed hem-o-lok con ottimo controllo emostatico.

RISULTATI

Il tempo operatorio è stato di circa 90 min, le perdite ematiche esigue (circa 100cc) e non abbiamo riscontrato complicanze perioperatorie. L'ospedalizzazione è stata di 4 giorni. Al follow-up dopo 12 mesi la sintomatologia era scomparsa.

DISCUSSIONE

Il trattamento della sindrome di Conn consiste generalmente nella surrenalectomia laparoscopica o Robot-assistita. Tuttavia la monolateralità pressoché esclusiva della malattia, generalmente le piccole dimensioni della tumefazione e la rarità estrema di malignità biologica depongono per la possibilità di un trattamento conservativo.

CONCLUSIONI

Il video proposto ha evidenziato come il trattamento laparoscopico conservativo dei tumori secernenti Aldosterone sia fattibile, riproducibile e sicuro. Questa procedura ha il vantaggio di preservare parenchima sano e di permettere un più rapido recupero post-operatorio.

2. CHALLENGING CRYOABLATION IN POLYCYSTIC KIDNEY GUIDED BY MULTIMODALITY IMAGING (US/CT)

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SCOPO DEL LAVORO

Il video descrive step by step il trattamento crioablativo percutaneo imaging combinato (US/CT) di una lesione di 2cm all'interno di una cisti complessa in una paziente affetta da rene policistico.

MATERIALE E METODI

Nel nostro centro abbiamo trattato 53 pazienti con crioablazione percutanea TC guidata; in 4/53 abbiamo utilizzato un approccio

combinato (US e CT); si trattava di pazienti con IR severa (eGFR <30) in cui era controindicata la somministrazione del mdc iodato.

RISULTATI

Nella nostra esperienza il tasso di recidiva locale di malattia (4/53) è stato dello 7.5%. In tutti e 4 i pazienti trattati con approccio combinato non ci sono stati né residui, né recidiva di malattia. La preservazione della funzionalità renale permette di considerare tale tecnica sicura in quei pazienti ad elevato rischio di sviluppare un'IRC.

DISCUSSIONE E CONCLUSIONE

Il video proposto ha evidenziato come il trattamento crioablativo percutaneo con imaging combinato (US e CT) sia una metodica relativamente semplice nella guida della criosonda e che consente un approccio sicuro ed efficace specialmente in casi selezionati dove per la presenza di patologie preesistenti o anomalie anatomiche non sia possibile effettuare un trattamento chirurgico o percutaneo esclusivamente CT guidato.

3. COMPLICATIONS OF MINIMALLY INVASIVE SURGERY AND THEIR INTRAOPERATIVE MANAGEMENT

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This video shows a series of complications occurred during laparoscopic and robot-assisted urological procedures and their intraoperative management. We present the minimally invasive treatment of obturator nerve injury occurred during a pelvic lymphadenectomy, the bowel suture after a big lesion occurred during a laparoscopic radical cystectomy. Moreover we present the bowel injury following trocar insertion, the external iliac vessels injury during robotic pelvic lymphadenectomy and the bowel and the bladder dome injuries during the laparoscopic adhesiolysis before a robot-assisted laparoscopic radical prostatectomy. All these complications occurred during a laparoscopic procedure except for the external iliac vessels injury that occurred during a robot-assisted radical prostatectomy. No patients experienced chronic sequelae.

4. 3D VERSUS 2D LAPAROSCOPIC RADICAL PROSTATECTOMY FOR ORGAN CONFINED PROSTATE CANCER

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In our video we describe a laparoscopic radical prostatectomy performed in 3D vision with nerve sparing technique. We also present our data to compare operative, oncological and functional results of 3D and 2D laparoscopic radical prostatectomy (LRP).

102 consecutive patients with clinical localized prostate cancer (age < 65, GS < 7, PSA < 10) underwent LRP between March 2014 and December 2015 in our institution. Patients were randomized into two groups, the first using a 2D-HD camera (50 patients) and the second one a 3D-HD camera (52 patients). We registered total operative time (TOT), anastomosis time (AT), blood loss, complications and pentapecta rates for both groups and compared the results. All the patients had at least a 3 months follow-up.

Mean follow-up was 14.7 months. Mean age was 57.3 and 58 years respectively in 2D and 3D group. We had a mean TOT respectively of 143 ± 17 and 118 ± 15 minutes and a mean AT of 31 ± 12 minutes and 23 ± 12 minutes. Mean blood loss was 230 ± 30 ml with 2D vision and 180 ± 40 with 3D vision. Pentapecta was reached respectively by 46% and 51.3% of patients at 3 months and 61% and 68% at 12 months.

5. INDOCYANINE GREEN GUIDED URETHRA-SPARING ROBOT ASSISTED MILLIN'S PROSTATECTOMY

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INTRODUCTION: Millin's prostatectomy is an established surgical option for large benign prostatic hyperplasia (BPH). The main pitfalls of surgical options remain the retrograde ejaculation, to date considered an intrinsic side effect of surgery.

METHODS: In this video we first report surgical steps of a robot assisted Millin's prostatectomy with complete preservation of prostatic urethra in order to preserve antegrade ejaculation.

The first step was a retrograde injection of 10 mL of indocyanine green through the urethral catheter placed at navicular fossa. Near infrared fluorescence (NIRF) imaging was used when dissection moved towards the median aspect of the lobe in order to improve visualization of the bladder neck and of the urethra, to avoid any unintended violation of urinary tract.

RESULTS: Operative time was 115 minutes. Estimated blood loss was 100 mL. Continuous bladder irrigation was not necessary. Urethral catheter was removed on third postoperative day. Patients was discharged on 4th postoperative day.

On final pathology, 75 grams of benign hyperplastic tissue were confirmed.

At 1 month evaluation, IPSS score decreased from 22 to 8, and patient reported a satisfying antegrade ejaculation.

CONCLUSIONS: We first described a NIRF imaging guided technique to perform robot assisted urethra sparing Millin's prostatectomy with preservation of ejaculatory function.

6. NEFROLITOTOMIA SINISTRA LOMBOSCOPICA

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Il video descrive il trattamento della calcolosi a stampo di gruppo caliceale inferiore sinistro ed infundibolare, in paziente donna di anni 65, precedentemente sottoposta a pielolitomia sinistra lombotomica 25 anni prima, a nefrolitotrixxia percutanea 13 anni prima, ed a numerosi trattamenti ESWL.

Vengono indicati gli accessi dei trocars,
la preparazione dello spazio di lavoro retroperitoneale sinistro,
l'extrarotazione del rene,
l'incisione della corteccia renale assottigliata,
la nefrolitolapassi,
l'identificazione della concrezione occludente il collettore inferiore,
la resezione cuneiforme del polo inferiore del rene sinistro,
la sutura del collettore e della corteccia renale.

Nei pazienti affetti da calcolosi renale con assottigliamento della corteccia, dove l'accesso percutaneo potrebbe essere indaginoso o complicato, la nefrolitotomia con accesso lomboscopico rappresenta ad oggi una tecnica efficace e miniinvasiva.

7. SAFETY AND EFFICACY OF THULIUM LASER ENDOSCOPIC EN-BLOC ENUCLEATION OF NON-MUSCLE-INVASIVE BLADDER CANCER

A. Ruffo¹, L. Romis¹, A. Pane¹, F. Iacono², S. Mordente¹, M. Nugnes¹, G. Di Lauro¹

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La resezione trans-uretrale della vescica (TURB) rappresenta il gold-standard nel trattamento delle neoplasie non muscolo invasive della vescica. L'enucleazione laser è stata di recente proposta come valida alternativa alle tecniche tradizionali.

In questo video viene mostrata un'enucleazione di una formazione vescicale. L'utilizzo della fibra laser permette di ridurre sensibilmente i tempi operatori, il sanguinamento e di evitare il riflesso otturatorio.

8. ROBOT-ASSISTED RETROPERITONEAL LYMPHADENECTOMY FOR NON SEMINOMATOUS GERM CELL TUMOR RESIDUAL DISEASE AFTER CHEMOTHERAPY

G. Simone¹, G. Tuderti¹, L. Misuraca¹, M. Ferriero¹, F. Minisola¹, S. Guaglianone¹, M. Gallucci¹

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INTRODUCTION: In this video we describe a robotic retroperitoneal lymphadenectomy for NSGCT residual disease after chemotherapy

METHODS: We present a case of a Robot-assisted Retroperitoneal Lymphadenectomy for Non seminomatous Germ Cell Tumor residual disease after 4 cycles of chemotherapy in a 18-yr old male, who underwent right orchiectomy for non seminomatous germ cell tumor.

The patient was placed in a supine position and a right template lymphnode dissection was planned. The anterior aspect of inferior vena cava and aorta is visualised, and the nodal mass is clearly identified. Interaortocaval lymphnode dissection is progressively performed, dissecting the lymphatic tissue proximal to the nodal mass and isolating its cranial aspect. The residual mass was approached, starting from the aortic aspect, with a sharp and blunt meticulous dissection. The distal aspect of the mass was identified and isolated, with a progressive dissection through the anterior wall of inferior vena cava.

The right template lymphnode dissection was completed.

Right spermatic cord was dissected and removed without any robot redocking.

RESULTS: Perioperative course was uneventful. The patient was discharged in postoperative day 5. The pathologic report confirmed the metastatic non seminomatous nature of the mass.

CONCLUSIONS: Robotic retroperitoneal lymphadenectomy for NSGCT residual disease is a safe and feasible treatment option in tertiary referral centers

12 maggio 2018

10:00 - 11:30

sala Farnese

Comunicazioni 5 - Carcinoma della Prostata

Moderatori: LORENZO LUCIANI, STEFANO SIGNORE, GIUSEPPE LUDOVICO

1. EFFICACY OF ⁶⁸GA-PSMA-HBED-CC PET IN PROSTATE CANCER (PCA) MANAGEMENT IN THE PCA UNIT AT THE UNIVERSITY HOSPITAL OF PARMA

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Objective

The prostate-specific membrane antigen (PSMA) is highly expressed on most prostate cancer (PCa) cells and is progressively up-regulated during disease progression, correlating negatively with prognosis [1,2,3].

Due to its selective overexpression in prostate cancer, PSMA has been recognized as a highly promising target for diagnostic and therapeutic applications [4,5,6].

A number of PSMA ligands have been developed for radiolabeling with PET radioisotopes such as ⁶⁸Ga or ¹⁸F which can be used to detect PSMA-expressing Pca [7].

On October 2015 the Prostate Cancer Unit was settled up at the University Hospital of Parma.

Diagnostic and therapeutic workflow of medium/high-risk patients is planned during the multidisciplinary (MD) meeting weekly, and all high-tech diagnostic procedures (PET/CT, echo-fusion biopsy, multiparametric MRI) are decided during the meeting.

In this study we report about impact of PSMA-PET/CT in managing Pca patients in the context of the PCa Unit.

Materials and Methods

All high-risk patients (pre-therapeutic PSA values above 20 ng/ml, Gleason score 8, persisting PSA values after radical prostatectomy, PSA values before SRT above 2 ng/ml or metastatic regional lymphnodes diagnosed during prostatectomy) were submitted to a pre-therapeutic PSMA-PET/CT. Intermediate risk patients were evaluated for PSMA-PET/CT according to multidimensional assessment, comorbidities, inconclusive conventional imaging for distant metastasis.

Synthesis of [⁶⁸Ga]-PSMA-HBED-CC was performed using a fully automated module (Scintomics GRP*, Fuerstenfeldbruck, Germany) and ⁶⁸Ga was obtained from a IGG100 ⁶⁸Ge/⁶⁸Ga generator (Eckert & Ziegler, E&Z, Berlin, Germany). Our method to assess the radiochemical and chemical purity of [⁶⁸Ga]-PSMA-HBED-CC was previously validated [8].

PET dynamic images were acquired immediately after i.v. injection of [⁶⁸Ga]PSMA-HBED-CC (150 MBq) on a hybrid scanner Discovery IQ (GE Healthcare). Whole body PET/CT was acquired in supine position from skull to medium thigh of the femur 60 min after tracer injection. In all patients, a non-diagnostic CT was acquired for attenuation correction.

Results

Since 2016 March to 2017 October, we produced 210 batches of [⁶⁸Ga]PSMA-HBED-CC for 303 patients (RCP% 99.90, Yield 65.53%). Data have been collected from 198 patients (until June 2017), age 70±7 yrs. Population was assessed for preoperative staging (30 pts, 65±9yrs, PSA median value 10), recurrence detection (158 pts, 71±7yrs, PSA median value 0.55 ng/ml), negative repeated biopsy (10 pts, 68±8yrs, PSA median value 6.6 ng/ml). Gleason Score (GS) was reported in 162 pts (tab.1).

Overall, 58 patients had positive scan results (93.1% with GS 7-9). In the staging group PSMA detected metastatic lesions in 5 pts (median PSA value 19 ng/ml) and lymphnode (LN) involvement in 2 pts confirmed after surgery. In the recurrence setting (158 pts, T3a in 73 pts, 9/158 N+, PSA doubling time 10.38±8 mo, PSA velocity 1.3±1.6 ng/ml/yr) PSMA-PET/CT revealed LN involvement in 28 pts (median PSA 0.52 ng/ml) and metastases in 23 pts (median PSA 0.6 ng/ml); in most of the pts metastases were in the bone (20 pts), 2 pts had lung and 1 liver metastases (biopsy proven). PSMA-PET/CT results changed treatment

planning in all pts with metastatic disease despite the low levels of PSA and guided treatment plan in patients with isolated lesions (radiotherapy, surgery, local treatment).

Discussions

The detection of metastases at especially low PSA values is not reliable enough with the current guideline-recommended imaging modalities. There is growing interest in non-FDG molecular imaging agents that may have greater sensitivity and specificity and may potentially add phenotypic information for the tailoring of individualized salvage therapies. In this context, PSMA-PET/CT has emerged as a promising, more accurate method. The multidisciplinary context of the PCa Unit allows appropriate utilization of complex diagnostic tools as PSMA-PET/CT directly connecting disease assessment and treatment planning decisions.

Conclusion

In medium and high-risk pts PSMA-PET/CT is a useful tool to detect distant lesions and LN involvement (driving to systemic or local treatment for confined lesions) even at very low PSA values. In the staging setting PSMA-PET/CT may support surgical decision especially in pts with comorbidities. A positive PSMA-PET/CT changes treatment management in most of the patients especially referring toward metastasis-directed therapies.

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2. 68GA-PSMA PET/CT IN RECURRENT PROSTATE CANCER AFTER RADICAL TREATMENT: PROSPECTIVE RESULTS AFTER TWO YEARS EXPERIENCE

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Objective

Prostate-specific membrane antigen (PSMA) is a membrane carboxypeptidase type II, widely over-expressed in prostate cancer cells. Recently, an innovative 68Ga-labeled ligand have been designed to target membrane PSMA in diagnostic PET/CT (1). We report two years experience with 68Ga-Prostate Specific Membrane Antigen (PSMA) PET/CT for detecting prostate cancer (PCa) disease in patients with biochemical recurrence (BCR) after primary radical treatment.

Materials and Methods

This prospective single-center trial was approved by the Local Ethical Committee (Protocol Code: IRST185.02; Eudract: 2015-003397-33). Inclusion criteria: proven PCa, radical therapy (surgery and/or radiotherapy with/without ADT) with curative intent, proven BCR (PSA increasing). 68Ga-PSMA PET/CT scans, performed from mid thighs to top of skull 60 minutes after intravenous injection of 150±50 MBq of 68Ga-PSMA were interpreted by two nuclear medicine experts physicians.

68Ga-PSMA PET / CT scans were performed on an integrated PET / CT system (Biograph mCT Flow® Siemens Healthineers, Germany) in 3D Flow acquisition (0,7 mm / sec).

Results were correlated to PSA at the time of the scan (trigger), staging PSA (iPSA), PSA doubling time (PSAdt), Gleason Score (GS), Tumor Stage (T, N), tumor residual after surgery (R+), time from primary therapy to BCR (TTR) and age. When available, 68Ga-PSMA PET/CT were compared to negative 18F-choline PET/CT routinely performed within 28 days (2,3).

Results

From November 2015 to October 2017, Three hundred fourteen PCa patients with BCR were enrolled in this study (mean age=69 years old; median trigger PSA 0.83 ng/mL). 68Ga-PSMA resulted positive, detecting at least one site of suspected PCa lesion, in 197 (62.7%) patients. On a patient-based analysis, local lesions limited to the pelvis (prostate/prostate bed and/or pelvic LNs) were detected in 117/197 patients (59.4%). At least one distant lesion (distant LNs, bone, other organs; separately or combined with local lesions) was detected in 80/197 patients (40.6%). Trigger PSA and iPSA were higher in PET positive vs. PET negative patients (respectively p<0.0001 and p<0.007). Eighty-eight negative Choline PET/CT resulted positive in 59 (67%) patients.

Discussions

A whole-body imaging technique detecting the source and extent of prostate recurrence in radically-treated patients experiencing biochemical recurrence is essential to inform the selection of the most appropriate therapeutic strategy. Currently, Choline PET

/ CT is used as gold standard in clinical practice, but suboptimal diagnostic accuracy has been reported in large cohorts, mainly due to a lack of specificity (4). In order to overcome this drawback a novel tracer, 68Ga-PSMA, is currently being tested in the biochemical recurrence scenario showing promising results both in terms of sensitivity and specificity (5,6). The two years experience data at our Institution, among the first in Italy to test this novel tracer, suggest similar excellent results. A major limitation of these imaging technique (Choline PET/CT and 68Ga-PSMA PET/CT) is the lack of histopathologic proof in most patients.

Conclusion

This prospective trial confirms the importance of 68Ga-PSMA PET/CT in restaging PCa with BCR, its superiority compared to Choline PET/CT and safety (5,6). Higher trigger PSA is associated with higher detection rate.

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3. COPY NUMBER VARIATIONS ANALYSIS IN PROSTATE CANCER FFPE TISSUE USING MLPA APPROACH

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Objective

Prostate cancer is one of the most common cancer affecting men [1]. It is a highly heterogeneous disease with some tumors that progress to invasive, life-threatening disease, whereas others stay latent for the remainder of person's lifetime. Moreover, prostate cancer is characterized by accumulation of multiple alterations across the genome.

The aim of this study is to identify new molecular markers in formalin-fixed paraffin-embedded (FFPE) tissue of primary tumors in castration resistant prostate cancer (CRPC) patients. To reach this objective, we will analyze the copy number variations (CNV) of 43 chromosomal regions linked to tumor aggressiveness and involved in prostate carcinogenesis, progression and metastasis using Multiplex ligation probe amplification (MLPA) approach.

Materials and Methods

FFPE samples were collected from 38 patients with prostate cancer after biopsy or radical prostatectomy. Participants were enrolled from the Department of Anatomic-pathology of Morgagni Pierantoni Hospital (Forlì, Italy) and Bufalini Hospital (Cesena, Italy). Five µm sections were cut, DNA isolation was performed using QIAamp DNA FFPE tissue kit (Qiagen), according to the manufacturer's instructions and DNA was quantified by spectrophotometry (NanoDrop ND-1000, Celbio). MLPA analysis (MRC-Holland) was performed using 150 ng of DNA dissolved in 1X TE buffer (Promega) following the manufacturer's instructions.

CNV analysis of 43 chromosomal regions was performed using X049-A1 Prostate cancer probemix (MRC-Holland) and was evaluated with Coffalyser software. Two different probes that recognize two different sites were used for 7 genes analyzed: PIK3CA, APC, EZH2, PTEN, ERG, TMPRSS2, AR. PTEN exon 4 was excluded from the analysis because it showed to be sensitive to evaporation during PCR reaction.

CNV values >1.3 were considered as amplification while values <0.7 were considered as deletion.

Results

Copy number variations of 38 patients were analyzed with MLPA kit. Three patients had a Gleason score ≤6, 9 patients had a Gleason score of 7, 12 patients had a Gleason score of 8, 10 patients had a Gleason score of 9, 3 had a Gleason score of 10 and 1 patient had Gleason score unknown.

Thirty eight genes were amplified in our case series and 13 presented amplification in > 30% of patients. The 13 genes, in decreasing order of percentages, are reported below: TMPRSS2 exon 6 (63.2%), TMPRSS2 exon 14 (57.9%), RAD21 (52.6%), MYC3 (50%), AR exon 6 (50%), AR exon 2 (42.1%), TCEB1 (39.5%), mir151 (39.5%), ERG exon 14 (36.8%), KIAA0196 (36.8%), MCM7 (36.8%), ZFH3 (34.2%), ERG exon 6 (31.6%).

Thirty two genes were deleted in our case series and only mir15a presented a loss in 39.5% of patients. Moreover, 7 patients presented TMPRSS2-ERG fusion.

Statistical analysis will be performed to correlate CNV with clinical characteristics of patients.

Discussions

As androgen steroids play a key role in prostate cancer growth and development, the principal therapeutic approach is androgen-deprivation. However, hormone therapies lead to a decrease in testosterone and dihydrotestosterone (DHT) synthesis and patients with metastatic prostate cancer only benefit temporarily from these therapies, progressing to a castration-resistant status [2]. For this reason it could be important to genetically characterize prostate cancer tissues from CRPC patients to identify those with a worse disease progression.

MLPA analysis allows to perform genetic characterization and for finding new alterations and important variants in paraffin embedded tissues [3]. We found that 13 genes were frequently amplified in our case series (> 30% of patients) and 1 was deleted in about 40% of patients.

The most amplified genes included TMPRSS2, involved in the fusion with ERG that is detected in about half of prostate cancer with favourable prognosis [4], 8q region (RAD21, MYC3, TCEB1 and mir151) that is associated to aggressive behaviour and poor prognosis of prostate cancer [5,6], and AR that is associated to early pathogenesis as well as in progression to advanced stages and mostly found in CRPC [7-9]. Mir15a deletion is associated to cancer progression [10].

Conclusion

Our results revealed that several genomic alterations are common in CRPC patients and they could be crucial to identify more aggressive diseases, characterized by poor prognosis and associated to progression to advanced stages.

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4. A SAFE LAPAROSCOPIC MODEL TO APPROACH PROSTATE CANCER: A SINGLE CENTER EXPERIENCE

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Objective

To assess the safety and the oncological and functional efficacy of a prospective series of extraperitoneal laparoscopic radical prostatectomy (ELRP), to suggest the validity of laparoscopic technique in oncological control and preservation of continence and sexual function, based on data from experience in a single urological center. Our report describes one institution's experience and the analysis confirms that the efficiency of laparoscopic radical prostatectomy is no longer in question; indeed, the authors report data on the short-term oncologic efficacy.

Materials and Methods

Over one year, 80 patients underwent to a videolaparoscopic radical prostatectomy for prostate cancer. All the procedures were carried out by the same operator. An extraperitoneal technique (ELRP) was used in 72 patients, a transperitoneal descending technique in 2 patients, due to previous abdominal surgery. Pelvic lymph node dissection (PLND) was carried out only in selected case (12 patients) belonging to intermediate/high risk group (2-4) according to Grade Group classification (Pierorazio et al).

Results

There were no conversions to open surgery. The mean (SD) operative duration was 127 (28,1) min (range 60-195 mL), the blood loss was 381 (276,62) mL, the hospital stay was 7.1 (2.0) days, and the duration of catheterisation 6.1 (1.5) days. Collectively, 26,25% (21/80) of patients had positive surgical margins. Mean PSA nadir at one month was 0,075 ng/ml.

Discussions

With the advent of robotic surgery, it seemed that laparoscopic technique was set aside and overcome, but several considerations should be made in favor of laparoscopy, especially as far as its economic and clinical benefits are concerned. First, the robotic procedure is expensive. Leonardo da Vinci devices are only available in some centers, so the waiting list for intervention is in many cases too much long. Secondly, the alternatives to robotics are open surgery and laparoscopy. Open surgery is now an

unsafe technique, especially if there are difficulties in some cases of accurate control of the haemostasis and to allow nerve sparing approach, when required. In these terms the benefit of laparoscopy is in the best vision and vascular and nervous control.

Conclusion

Laparoscopic technique is technically safe and not too much difficult nor impracticable, however with a longer learning curve than the open and robotic techniques. The benefits are to be found in terms of short-term oncological outcomes as well as continence and sexual power in patients undergoing NS technique. We highlight the feasibility of the technique and the benefits of cost reduction.

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5. A SINGLE-INSTITUTION RETROSPECTIVE ANALYSIS OF LIGATION VS BIPOLAR COAGULATION OF DORSAL VASCULAR COMPLEX DURING RARP

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Objective

The ligation of the dorsal vascular complex (DVC) during robot-assisted radical prostatectomy (RARP) can be sometimes avoided by using an accurate bipolar coagulation of the veins. The aim of this study is to compare outcomes of RARP with ligation versus bipolar coagulation of the DVC in a single-institution retrospective analysis.

Materials and Methods

Between January 2016 and January 2017, 48 RARP were performed at our institution. RARP was performed according to the Patel technique, by one single experienced robotic surgical team (1).

The veins of the DVC were closed by using an accurate bipolar coagulation or was ligated with a Vicryl-0° continuous suture. Patients' characteristics and data are recorded in a prospective maintained database and retrospectively analysed. The primary endpoint is estimated blood loss (EBL) during prostatectomy. Secondary endpoints are: operative time, transfusion rate, hospitalisation, positive surgical margins (PSMs) in general and apical PSMs in particular and 1-month PSA and continence (defined as the use of 0 pad or 1 security pad per day). Means and standard deviation were reported for continuously coded variables. Statistical analyses were performed using SPSS version 20.0 (IBM, Armonk, NY, USA), considering a statistical significance at $P < 0.05$.

Results

Of the total 48 patients, 22 had suture ligation (Group 1) and 26 had bipolar coagulation (Group 2) of the DVC.

The two groups had comparable preoperative features and no statistically significant differences were found in term of primary and secondary endpoints. The mean age was 62.55 ± 6.13 years for Group 1 and 63.12 ± 5.85 years for Group 2 ($p=0.7436$). The mean operative time was 161.05 ± 24.13 minutes for Group 1 and 153.39 ± 24.7 minutes for Group 2 ($p=0.2849$). The mean blood loss was 112.73 ± 76.17 mL for Group 1 and 108.46 ± 86.8 for Group 2 ($p=0.8583$). The mean days of hospitalisation were 4.14 ± 0.77 for Group 1 and 4.12 ± 0.86 for Group 2 ($p=0.9333$). The mean value of PSA at 1-month follow-up was 0.06 ± 0.07 ng/mL for Group 1 and 0.06 ± 0.06 ng/mL for Group 2.

No patients received blood transfusions in both two groups. No differences were seen in PSM ($p=0.8642$). In particular, no differences were seen in Apical PSM ($p=0.5112$). At 1-month follow-up 54.55% of the patients were continent (0-1 security pad) in the Group 1 and 53.85% of the patients were continent in the Group 2 ($p=0.9614$). 13.64% of the patients used more than 1 pad/die in the Group 1, and 11.54% in the Group 2 (0.8267).

Discussions

Theoretically, an accurate and selective bipolar coagulation of the DVC could be associated to greater blood loss but, on the other side, to a low rate of PSM and an early recovery of continence due to a minor damage of the rhabdosphincter fibres avoiding the suture (2). Obviously, we do not intend to claim that the selective bipolar coagulation is the best way to manage the venous complex, but we highlight the fact that it can be an interesting alternative to the classical dorsal vascular plexus suture.

Conclusion

Our preliminary results show that the bipolar coagulation of the DVC during RALP is not detrimental on surgical morbidity or oncological safety and no differences in functional outcome are evident at a short term follow-up between the two techniques.

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6. URETHRAL SUSPENSION DURING OPEN RETROPUBIC RADICAL PROSTATECTOMY: A NOVEL METHOD TO IMPROVE PRECOCIOUS POSTOPERATIVE URINARY CONTINENCE

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Objective

During the last decades, many technical improvements have been introduced, in order to preserve postoperative functional results after radical prostatectomy; nevertheless, postoperative stress urinary incontinence remains a major complication, largely affecting patients quality of life.

Aim of this study was to evaluate immediate postoperative results of a new technique of intraoperative urethral suspension, whose tension can be adjusted postoperatively.

Materials and Methods

From June 2017 to October 2017, 30 patients underwent to open radical retropubic prostatectomy with nerve and bladder neck sparing technique for localized prostate cancer. 15 patients received a standard procedure (group 1); on 15 patients we performed a new technique for adjustable urethral suspension (group 2). Our standard technique for the urethrovesical anastomosis includes an interrupted suture with 3 stitches on both sides (towards 11, 9, 7 on the left, and toward 1, 3, 5 on the right), and a running suture on the posterior urethral plate (which is tied to the suture towards 7 on the left, and to the suture towards 5 on the right). According to the new technique, the threads of the sutures towards 7 and 5, are put together with a prolene sling (1 x 10 cm), which is brought outside the suprapubic skin on both sides. Tension on both threads is then modulated at 24 and 48 hours postoperatively, according to patient's continence and using a stress test. For each group, we evaluated number of pads per day and International Consultation on Incontinence Questionnaire (ICIQ) score at 24 and 48 hours and at 7 days postoperatively. Continence was defined as the need of 0-1 pad per day.

Results

Results: At 24 hours, 3 patients (20%) in group 2 were continent, Vs. 1 patients in group 1 (6%); at 48 hours, 8 (53%) Vs. 3 (20%); at 7 days, 11 pts (73%) Vs. 6 pts (40%) were continent. No complications related to the new technique were recorded.

Discussions

Although our limited series of patients, and with a low follow-up period, our results showed better early continence results after traction on urethral suspensions at 24 and 48 hours postoperatively, compared to patients who received a standard urethrovesical anastomosis technique. In our study we didn't have complications related to the new technique of urethrovesical anastomosis: no urinary retention, anastomosis leak or perineal pain was observed.

Conclusion

We showed that postprostatectomy incontinence can be improved using a new technique for vesicourethral anastomosis that can be modulated postoperatively repositioning membranous urethra in the retropubic space. This could significantly improve the quality of life of patients after radical prostatectomy.

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7. CLIPLESS ANTEGRADE NERVE PRESERVATION IN LAPAROSCOPIC RADICAL PROSTATECTOMY WITH SEXUAL FUNCTION EVALUATION

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Objective

We present our technique for "clip-less" antegrade neurovascular bundle preservation during laparoscopic radical prostatectomy, along with the short-term follow up of our patients' sexual function.

Materials and Methods

We performed laparoscopic radical prostatectomy using an anterograde extraperitoneal approach. After splitting and conservation of the bladder neck, the prostate back plane was developed distally to the apex of the prostate in the median line. This plan was completely developed by releasing vascular peduncles and neurovascular bundles in the medial-lateral direction, with occasional use of bipolar cauterion and without the use of clips.

Results

A total of 85 patients met these inclusion criteria between January 2015 and December 2016, with an average follow-up of 6 months. Patients received the International Index of Erectile Function – 5 (IIEF-5) at 1, 3, 6 and 12 months after surgery. The overall score for both unilateral and bilateral nervous groups was 11, 15, 17 and 22 at 1, 3, 6 and 12 months postoperatively, respectively. These coincided with a return to the base power rate of 47%, 54%, 66%, and 69% at 1, 3, 6, and 12 months, respectively.

Discussions

We are encouraged by our initial results of LERP, which we believe allows a finer dissection with less trauma during nerve preservation. This technique may result in greater preservation of the NVBs, translating to faster and, perhaps, greater recovery of the patient's sexual function.

Conclusion

Anterograde dissection of the neurovascular bundle, avoiding the use of clip or monopolar cauterization during laparoscopic radical prostatectomy, may result in an early return of sexual function

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8. ANASTOMOSIS DURING ROBOT-ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP):

THE ROBOT MAY BE USEFUL IN EARLY URINARY CONTINENCE

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Objective

Robotic surgery could lead to improved continence outcome in terms of early recovery because of the magnified 3D vision and the possibility to reach spaces other way not reachable. Age, scars in the rhabdosphincter, length of urethra and postoperative sphincter insufficiency have been considered as possible causes of temporary or definitive urinary incontinence.

We describe a modification of the anastomotic RALP technique that overcomes caudal retraction, reconstructs the posterior fibrous raphe, reconstructs the sphincter, "urethralizes" the levator-ani muscles and restores the anterior support.

Aim of the study is to compare retrospectively the new anastomotic RALP technique with standard technique performing Van Velthoven stitch with and without Rocco stitch.

Primary endpoint is continence rate at different time; secondary endpoint is evaluation of urine leakage and anastomosis stenosis rates related to the technique.

Materials and Methods

From June 2015 to June 2017, 190 patients with localized prostate cancer underwent RALP new anastomosis (group 1) and were retrospectively compared with 200 patients (cT1-3, cN0, cM0) undergone Van Velthoven with Rocco stitch (group 2) and 200 patients (cT1-3, cN0, cM0) undergone Van Velthoven without Rocco stitch (group 3).

New surgical technique: the posterior semi-circumference of the sphincter is joined to the residuum of Denonvilliers' fascia using a V-Lock 23 cm long continue suture including laterally part of levator-ani muscle; successively this suture is fixed to the posterior bladder wall 1 cm cranial and dorsal to the new bladder neck before completing the vesicourethral anastomosis with the aim to avoid caudal retraction of the urethrosphincteric complex. Vesicourethral anastomosis is subsequently performed with care taken not to involve the neurovascular bundles. To enlarge the concept of total anatomical reconstruction of Porpiglia we also "urethralize" the right and left levator-ani towards the anastomosis and restore the anterior support.

Pre, intra and postoperative and pathological variables were analyzed.

The same surgeon performed all RALP.

Continence was analyzed preoperatively and 24 hours, 1, 4, 12 and 24 weeks after catheter removal.

Results

600 patients were analyzed. In group 1 the continence rate at catheter removal and at 1, 4, 12, and 24 weeks was 60.5%, 63.0%, 68.0%, 69.0% and 71.0%, respectively.

In group 2 it was 52.0%, 52.5%, 59.5%, 61.0% and 69.5%.

In group 3 it was 51.0%, 52.0%, 58.5%, 60.5% and 68.0%

Acute urinary retentions in group 1 was 2.5% (3 % in group 2 and 2.0% in group 3) and urine leakage was 1% (2% in group 2 and 3).

Discussions

The presence of urinary incontinence after RP can significantly impact patient quality of life, the desire to reduce the invasiveness of open surgery and the search for better functional results have been driving factors for the popularity of laparoscopic techniques. Optical magnification has been considered one of the strongest advantages of laparoscopy, and this is particularly true in the case of surgery for prostate cancer. Robotic technology provides further advantages, including binocular three-dimensional

visualization with magnification, physiologic tremor of the surgeon's hand filtration with demultiplication of movements, and wristed instrumentation. Meticulous, precise, and accurate surgical movements are fundamental for minimizing perioperative complications and preserving the key anatomical structures that are involved in urinary continence (1). Indeed, many published papers have shown the advantages of robotics in terms of functional results (2-5). Although the mechanism of continence recovery after surgery is complex and not wholly understood, it is universally accepted that the main aim of the surgeon must be to preserve the anatomical structures involved in continence and to precisely conduct reconstruction phase. In recent years, several technical modifications aimed to improve postoperative continence after RP have been proposed, including bladder neck preservation, intussusception of the bladder neck, approximation of anterior supporting structures with sparing or reconstruction of the puboprostatic ligaments, creation of posterior urethral support (posterior reconstruction of the rhabdosphincter), and variations of suspension sutures. According to Patel et al (6), anterior support provides anatomical support for the urethra, which allows the urethral length to be maximized during apex dissection and either the urethra or the rhabdosphincter to be stabilized in their anatomical position.

Rocco et al (7) proposed a posterior fixation of the anastomosis; this technical modification has been widely used by RARP surgeons even if Menon et al (8) did not find any improvement in the early continence.

In the present study, we reported a RALP anastomosis technique that aimed to restore the anterior and posterior supports to the sphincter. Firstly, we believe that the preservation of pubo-prostatic ligaments is crucial because it allows for better apex dissection; secondly, incision of the bladder necks may be performed in a bloodless way and posterior aspect of the bladder neck should be anchored to the median raphe to reinforce the posterior reconstruction. Then prostatic apex should be done step-by-step, with meticulous dissection of muscular fibers limiting the use of cauterization as much as possible to preserve the anatomical structures that are involved in the support of the urethra and to maximize urethral length. The urethralization of levator ani muscle, as described by Porpiglia [5], do provide an improvement in the continence process as it is provided by ProACT balloons. During the anterior reconstruction, in our technique an apron will be restored and reanchored to the muscular fibers that arise from the anterior aspect of the rhabdosphincter. In summary, the three cornerstones of our technique are the anatomical dissection of the prostatic apex the restoration of the anatomy of the peri-urethral structures by protecting the anastomosis using three posterior layers and two anterior layers, which allows for "tension-free" anastomosis and finally the urethralization of the levator ani muscle.

Conclusion

There is no difference between the group 2 and group 3, anyway the new anastomotic technique (group 1) seems to be promising as it results in the early recovery of urinary continence.

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9. EXTRACELLULAR COLLAGENIC TYPE AND STRUCTURAL ORGANIZATION CHANGES IN PROSTATE CANCER AND BENIGN PROSTATIC HYPERPLASIA

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Objective

It is now ascertained that stromal-epithelial interactions play a crucial and poorly understood role in carcinogenesis and prostate cancer progression. Tumor stroma is a complex and dynamic set of cells that includes a fibroblastic component often referred to as cancer-associated fibroblasts and a collagenic and non-collagenic extracellular reactive matrix. In the present study we investigate the collagenic extracellular reactive matrix in a series of prostate cancer biopsy specimens and benign prostatic

hyperplasia (BPH) following transurethral resection of the prostate (TURP). Particularly the study focused on the type of collagen composition and its spatial organization.

Materials and Methods

Sixty prostate specimens were investigated. Fifty specimens were diagnosed as prostate carcinoma and 15 as benign prostate hyperplasia. The samples were fixed in 10% formaldehyde and paraffin-embedded. Two-micrometer thick sections were cut and stained with picric acid-sirius red staining to distinguish type I and III collagen using a polarized light microscopy. The ratios of collagen I/III were automatically evaluated using a computer-aided image analysis system. The spatial organization was evaluated on unstained tissue sections by combining a multi-photon microscopy and an open-source MATLAB software framework that includes two separate but linked packages "CurveAlign" and "CT-FIRE". All of the data were analyzed using Statistica software (StatSoft, Inc., Tulsa, OK, USA) and GraphPad Prism 5 (San Diego, California, USA). P-values of ≤ 0.05 were considered to be statistically significant.

Results

By observing the stained sections with Picro-Sirius Red we found different conformations of the collagenic extracellular matrix. Collagen matrix is characterized by a set of highly irregular fragments with different size, size and roughness. In particular, the tumor microenvironment consists of thin collagen fibers while dense plaques have been observed in the microenvironment that characterizes BPH status. Additionally, we found that in BPH type III collagen is less represented if compared to the low and high-grade tumoral tissues. A statistically significant difference was identified between BPH and biopsies of patients with low-grade tumor and in whose fragment no neoplastic cells were observed ($p < 0.001$). In addition, the alignment of collagen fibers is much more pronounced in biopsy of prostate cancer patients than in tissues of patients with BPH.

Discussions

Prostate stroma is a complex dynamical framework, which involves multiple pathways that are dependent on the homeostatic balance between several growth factors. The topographical organization of collagen within the tumor microenvironment has been implicated in modulating cancer cell migration and independently predicts progression to metastasis. It's known that collagen matrices with small pores and short fibers, triggers a conserved transcriptional response and subsequent motility switch in cancer cells resulting in the formation of multicellular network structure. An initial step in cancer metastasis is the migration of tumor cells through the extracellular matrix and into the lymphatic or vascular systems. Several features of the tumor ECM have been associated with progression to metastasis. In particular, regions of dense collagen are co-localized with aggressive tumor cell phenotypes in numerous solid tumors, including breast, ovarian, pancreatic and brain cancers. However, sparse and aligned collagen fibers at the edges of tumors have also been reported to correlate with aggressive disease. It remains unclear whether and how collagen architectures have a role in driving metastatic migration programs or if they simply correlate with progression of the tumor [1].

Conclusion

Collagen type (type I versus type III) composition and its spatial organization i.e. alignment is different when evaluated in tumoral versus inflammatory state. Given the dynamical process of tissue matrix remodeling, our findings first demonstrated that stromal collagen alignment might provide additional, clinically-relevant information about prostate cancer and underscores the importance of stroma-cancer interactions.

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10. DOES SITE OF SPECIMEN EXTRACTION AFFECT INCISIONAL HERNIA RATE AFTER ROBOT ASSISTED LAPAROSCOPIC RADICAL PROSTATECTOMY?

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Objective

Robot assisted laparoscopic radical prostatectomy (RALP) spread in the last decade as a minimally invasive alternative to open radical prostatectomy for men with localized prostate cancer. It is associated with excellent surgical, functional and oncological results with less postoperative pain and shorter convalescence. Anyway, the development of an incisional hernia (IH), may negate known benefits as it can lead not only to bothersome symptoms but also to severe complications, such as bowel obstruction, strangulation and perforation. Port-site or extraction site hernias, whose incidence rate is underdiagnosed, have become more commonly after minimally invasive surgery; but IH rate after robot-assisted radical prostatectomy has not been well characterized. This study aimed to evaluate the impact of extraction-site location (vertical supra-umbilical incision versus an off-midline incision) on incisional hernia rates in robotic prostatectomy.

Materials and Methods

We included in the study 800 patients undergone RALP, 400 with a supra-umbilical incision for specimen extraction and 400 with off-midline incision. All were followed up for at least 3 years. The main study end point was IH occurrence at the extraction site (midline versus off-midline).

Results

IH rate for the entire series was 4.75 %, in particular 5% for the midline group and 4.5 % for the off-midline group. The hernias were diagnosed at a mean of 20,2 and 18.2 months after surgery, respectively in the two groups. There was no statistically significant differences in baseline characteristics; anyway larger prostate weight, wound infection and history of prior cholecystectomy were associated with higher proportion of IH.

Discussions

The occurrence of IH remains underreported, problematic to patients, and a concern because it is a complication often requiring surgical revision, with a reported failure rate of 45%. Another very concerning aspect of IHs is that their incidence increases with time and appears to be largest under reported in RALP series. Mudge and Hughes demonstrated that 35% of all IHs occur after 3 years in a study that followed patients prospectively over 10 years [1]. The IH rate after RALP has been poorly defined, with a range of 0-8 %. Patel et al. had a rate of 0,2% with average follow-up of 24 months [2]. In another series of more than 600 RALP by Blatt et al, the incisional/inguinal hernia rate was 1.9% at 4 months of follow up [3]. Many factors lead to the formation of port-site hernias: mechanical factors as trocar type and size, site of specimen extraction and wound extension or stretching for organ retrieval, and perioperative factors as trocars direction, wound infection, operative time, use of drain and port location, post-operative persistent cough [4, 5]. Pre-existing disease like diabetes mellitus, connective diseases, obesity, malnutrition, smoking, umbilical defects are considered as risk factors.

Obviously an improper closure of fascial defect is the single most important factor related to HI, which more often occurs in obese patients because of it is difficult to find the fascia and the intra-abdominal pressure is higher as well [6].

Recently, it has been reported that a transverse incision at the midline trocar site decreased the incidence of IH from 5,3% to 0,6%; as the increased risk of herniation through the midline incision may be because of the lack of muscular abdominal wall layers. Specimen extraction site has been shown to play an important role in IH development and may account for the major differences in the reported hernia rates [7]. Singh et al found a significant differences when the midline was used as the extraction site compared to off midline, 17,6% vs 0% respectively in patients undergone laparoscopic colorectal surgery [8]. Some authors have reported a lower incidence of hernias with the use of a para-median incision and no bladed trocars which have a conical tip [9].

The linea alba, including the umbilicus, lacks the muscle support in spontaneously fascial closure due to the lack of rectus muscle; it is possible that midline incisions through the avascular linea alba are put on tension by abdominal wall contraction directed away from the incision. This might result in tension-induced ischemia on the closure line and thus impairs wound healing, whereas paramedian incisions have been shown in animal studies to be supported by muscle re-opposition after blunt trocars were used [10].

In conclusion, the incidence of IH after RALP is likely under reported in prior studies.

Conclusion

Extraction site hernias are a rare but a potentially serious complication following RALP.

In our series, the midline extraction doesn't result in a significantly higher IH rate in comparison with the off-midline extraction site.

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11. DOES THE PROSTATE STATUS MODIFY THE CLINICAL OUTCOME OF RADIUM-223 TREATMENT IN BONE METASTATIC CRPC?

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Objective

In patients affected by bone metastatic castration-resistant prostate cancer (mCRPC) survival is improved by Radium-223 (223Ra). Even if antiandrogen hormonal therapy is maintained, the treatments for CRPC are stopped in patients undergoing 223Ra. The primary prostate tumor could progress during 223Ra treatment period, particularly if hematological toxicity, patients compliance and general status and other factors might limit the early start of further therapy.

The aim of our study was to evaluate in terms of progression, death and treatment withdrawal, the clinical impact of the presence

or absence of primary tumor in patients undergoing 223Ra therapy for mCRPC.

Materials and Methods

We reviewed the clinical data of patients treated with 223Ra for symptomatic mCRPC between January 2016 and July 2017. Written informed consent was obtained. Luteinizing hormone-releasing hormone analogues were continued in all patients. Within 1 month of the planned start of the treatment Technetium-99m bone scan and total-body CT scan were performed. 223Ra was administered at the dose of 55 kBq/kg every 4 weeks for up to six injections. Patients didn't receive any other anticancer therapy during 223Ra treatment.

Patients were stratified in 2 groups in relation to the presence or absence of the primary prostate tumor.

Discontinuation of Radium-223 depended on: patient's request, occurrence of CTCAE grade 3 or 4 neutropenia, anaemia or thrombocytopenia longer than 14 days, visceral progression or for a dose delay of more than 4 weeks. The clinical outcomes of the 2 groups were compared in terms of progression, death and treatment withdrawal due to toxicity.

Results

The clinical records of 44 consecutive patients were reviewed. Median age was 76 years and median BMI 27,2. The Gleason grade of the prostate tumor was 7 in 11 (25%), 8 in 13 (29,5%) and ≥ 9 in 13 (29,5%) patients. In 28 patients (63.6%) the primary prostate tumor did not receive any local treatment while 16 (36.4%) and 5 (11.3%) patients had previously undergone radical prostatectomy or prostate radiotherapy respectively. Twenty-six (59.1%) patients had previously submitted to systemic chemotherapy.

Bone metastases were less than 6 in 9 (20,4%), between 6 and 20 in 10 (22.7%) and more than 20 in 24 (54.5%) patients. 223Ra treatment was discontinued in 17 patients (41%). Out of these 17 patients, 14 (77,7%) had their prostate, previously submitted to radiotherapy in 2 patients. Reasons of discontinuation were: toxicity, progression and other causes in 9 (20,4%), 7 (15,9%) and 1 (2,3%) patients respectively.

Twelve (27.3%) patients progressed, out of them 9 (75%) had their prostate, submitted to previous radiotherapy in 1 case only. Four of the 5 dead patients had their prostate. Although no statistical analysis was performed due to the small patients' number, our result suggest the relevant prognostic role of the presence/absence of the primary tumor in terms of treatment completion and progression

Discussions

During 223Ra treatment, in absence of other concomitant anticancer therapy different than androgen deprivation, 78% of the treatment discontinuations and 75% of the clinical progressions were recorded among patients maintaining their prostate.

Conclusion

Our preliminary experience show that the presence of the primary prostate tumor might play a detrimental role in terms of clinical response to 223Ra.

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12 maggio 2018

10:00 - 11:30

sala Baglioni

Comunicazioni 6 - Miscellanea

Moderatori: VITO DOMENICO RICAPITO, MICHELE AMENTA, SIMIONA SERRA

sabato 12 maggio 2018

abstracts XXV Congresso Nazionale AURO.it - ROMA 10 - 12 maggio 2018

1. ETHICAL CONSULTATION FOR UROLOGICAL SURGERY IN FRAGILE ELDERLY PEOPLE WITH ONCOLOGIC DISEASE

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Objective

The increase in life expectancy is an excellent goal, but it needs to consider that even if there is a gain of active life expectation, the end of life reserves a period of not good health and chronic/oncologic diseases with lack of self-sufficiency. This aging process creates a population "at risk", worth of particular attention: fragile elderly people. They are subjects with advanced or very advanced age, instable health, high risk of disability and fast worsening of functional status. Furthermore loneliness and social-environmental factors can generate a condition of frailty regardless precedent conditions. The Home is the main place of life at all ages. Elderly fragile people has the civil right of assistance as long as possible. Management of fragile elderly patients is still largely debated. In the past economic assistance with low clinical content was encouraged; in this context find place an evaluation also based on ethical clinic. We don't want to discuss surgical methods or clinical results, but we would like to demonstrate the way we answered an explicit (or sometimes tacit) question when we decided to perform surgery on a patient with these characteristics: "It really needs to perform surgery on him at his age?"

Materials and Methods

The word "fragile" identifies a condition of risk and vulnerability, with unstable equilibrium towards negative events. Elderly people, due to aging process and intercurrent diseases, become more vulnerable and many conditions can change homeostatic balance of their organism (1). It is defined essentially by two paradigms: Biomedical (2); BioPsychosocial (3,4). We applied the Multidimensional Oncological Geriatric Evaluation and the scale: Vulnerable Elders Survey and screening tool (5,6). We defined three categories of patients: FIT; UNFIT/VULNERABLE; UNFIT/FRAIL. We scanned the context in which patient live, the carried out activities and the potential "caregivers". This anglo-saxon term is largely used, but we think that it's better to talk about "the person that take care of", that often is a familiar but not always. Cancer changes not only life of affected people, but also family architecture. Who take care of the sick person is a central figure in the journey of oncologic patients with significant assistance and ethical tasks (7).

Results

Between June 2016 and September 2017 we perform surgery on 409 patients (in SC Urologia of ASL CN1, SS Annunziata Hospital of Savigliano and Regina Montis Regalis Hospital of Mondovì) that can be defined fragile elderly people. The results of the interventions will be discussed at the congress. The caregiver identified by the patient in 380 cases was a family member and in 29 was chosen out of this context. In only 9 cases the patient did not own a family, while in the remaining 20 cases the choice was due to the refusal of the patient to address a family member (8 cases) or the refusal of the family member to take the responsibility

for sharing the proposed path (12 cases). In 14 patients we offered a psychoanalytical support: it was refused in 10 cases and in 4 cases it was refused the even initial meeting. These data have also been analyzed from a purely philosophical point of view. The cases in which the oncologic patient refuses to address a family member, and the cases in which the family member refuses the responsibility for sharing the course of care have a common denominator: the difficulty of dealing with their own fragility and vulnerability within an existential context that prefers the amount of life to the quality of life. Working on the obsessive extension of lifetime without the awareness that we are constitutively fragile because mortals and living so much is not of value in itself, It leads into a dynamic where figures involved – doctors, patients and family members – cannot understand their needs. It is likely that an oncologic patient, perceiving its enormous weakness that humiliates its independence, does not feel it weigh on a family member: in a society where fragility must not be contemplated, the embarrassment and the difficulty of communicating with the people to whom you are most affiliated increase. In addition, the disproportion between increased life expectancy and reduced psycho-physical well-being can make the elder patient feel like a burden – economically, but not only – for their loved ones. Therefore, working on the awareness that being fragile and vulnerable is a normal condition because it is due to our way of being mortals, and unfortunately, cancer falls into what defines our mortality. Where the family member refuses to take responsibility for sharing the care of the sick person, there is likely to be – in spite of the difficulties associated with a frustrating job world – a sense of inadequacy, which also comes from their own inability to face emotionally and practically a situation in which the end of life is highly probable. Being accustomed to never thinking of death, when we face an oncologic disease, we feel terrified, having no idea how to behave with the beloved person that is affected. A careful course of Death Education would help the oncologic patient to welcome the psycho-oncological support.

Discussions

Integrating the data obtained from the VMG and those obtained from the interview with caregivers, we have come to analyze everything from the point of view of clinical ethics (8), but in particular inspired by Bioethics of everyday life (9,10,11) that want to face daily life themes of professionals of care process so that ethics become an operative tool stimulating a change for improvement of health intervention.

Conclusion

We believe that Ethical consultation can be of assistance for any health worker, patient, caregiver who need advice in facing hard or suffered decisions. In particular helps care providers to answer the initial question: "It really needs to perform surgery on him at his age?", not only according to guidelines indications (indispensable, but not to be used uncritically), but also in the perspective of total care so that the narrative medicine based approach (12,13,14) becomes increasingly important and widespread in nursing places.

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2. ROLE OF CARE AND CASE MANAGERS IN CANCER PATIENTS: OUR EXPERIENCE

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Objective

The medical care manager maintains the integration with social health services and with other professionals, takes into account the cost-quality ratio required by the system and offers the patient the most favorable solutions for his clinical care condition. We have applied these concepts to the activity of the Assistance and Services Center (CAS), a structure to which all patients with first diagnosis of cancer refer to as indicated by the Oncology Network of Piedmont and Valle d'Aosta. The activity of the medical care manager is flanked by the nursing case manager who is the one who manages the case. His role is to improve effectiveness and efficiency of health care, according to coordination of resources. Our goal is not only to guarantee to oncologic patient a linear path and to solve quickly his health problems but also to create an institutionalized figure to which the patient can always refer to.(1,2,3)

Materials and Methods

At the CAS the patient with first diagnosis of cancer is welcomed by the case manager who collects anamnestic information concerning physical-psychological and social condition. Then the patient is entrusted to the care manager: according to clinical data and type of cancer the care manager sets the diagnostic path based on guidelines used in our reality (AIOM 2017 guidelines integrated by EAU guidelines). The case manager programs examinations using preferential courses dedicated to CAS patients. The outcomes are collected and presented again to the care manager and then to the Interdisciplinary Care Group (GIC); during GIC there is collegial and multidisciplinary evaluation with the participation of urologists, oncologists, radiotherapists and, if necessary, specialists in palliative care or other specialists for the most appropriate therapeutic path. The results are then communicated by the care manager to the patient; if surgical intervention is indicated, the care manager organizes the pre hospitalization and the insertion in operative note according to waiting times and to specific indicators of the Oncology Network. CAS case manager interfaces with case manager of the department delivering the nursing card so that the data already collected can be used during care activity in the hospitalization and returned back at the end of the hospitalization itself. Care manager follows the patient during hospitalization, if possible participates in surgical intervention, follows the course plans, delivers the histological examination after GIC discussion, communicates to the patient the planned follow-up, plans the next Uro-Oncological check. During first access to CAS, the patient is provided with a mobile phone number to contact the care manager from Monday to Friday between 8 and 17. On holidays and during times not indicated, if necessary, the patient can contact the available urologist. (4,5,6,7)

Results

In period 1/9/2016 – 30/11/2017 were assessed at the two urological CAS of ASL CN 1 (SS. Annunziata Hospital of Savigliano and Regina Montis Regalis Hospital of Mondovì) 221 Patients divided as follows:

Cancer location	Age range	Men	Women
Prostate	51-85	101	
Testis	18-27	10	
Kidney	45-85	30	9
Urothelium	42-93	59	12
Totali	18-85	200	21

To be noted: one case of single ureteral neoplasm, one case of association between prostatic and renal cancer and one case of bilateral synchronous renal cancer.

Discussions

Care and case managers must investigate multiple aspects of patient involved in the diagnostic and therapeutic process. It must not be a subjective judgment, but must provide objective information based on: careful observation, medical history and physical examination, interviews with the family (if accepted by patients), involving psycho-oncologist and social assistant if needed and activating “protection of fragile families” path if necessary. This is the moment in which a “therapeutic alliance” is created between the patient and the family, bringing into play the human factor that allows to create a path of care by rationalizing sequences and resources. During the interview it is very important to find a point of conjunction between the two parties. Sometimes the disease totally changes life of the patient and life of the people around him. Care and the case manager must help to redesign the patient's future in a concrete way. The planning of interventions represents the central function of these figures, through the rationalization of measures and the forecast of future needs in relation to the and evolution of the care process, avoiding waste. Wastes are considered: increase in days of hospitalization, repetition of examinations, double or triple steps in different surgeries. Finally of fundamental importance: the moment of hospital discharge with therapeutic education about management of therapies when necessary; the monitoring to check that the planned interventions have been effective for the achievement of the objective, the evaluation that allows (at the end of the diagnostic-therapeutic-assistance path) to verify the correspondence between the expected objectives and the achieved results.(8,9,10)

Conclusion

A fundamental and inspiring moment of the described activity is the indications of the Oncology Network of Piedmont and Valle d'Aosta. In particular the network was born as an organizational model and is not a rigid bureaucratic instrument of uniformity. It is the opportunity to do a different type of oncology: the Net teaches us to work together, to do better and better and not to treat an illness but to take care of a sick person, accompanying patient not only in a diagnostic and therapeutic path, but also in a course of psychological, social and assistance support. The existence of the Network improves daily experience of people that manage the care and people that face the care itself. The operators are proud to be part of the Network because of its “values” and because of inspiring principles of our activity: a reference asset for our identity and for the citizens who approach it. The “Compass of Values” of the Oncology Network of Piedmont and Valle d'Aosta is a cultural reference model for operators to align behaviors, organizational models and operational procedures. Finally, it declines all the individual values that inspire the Net in behaviors that concretize them and in responsibilities that guarantee them.

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3. NEUTROPHIL-TO-LYMPHOCYTE RATIO: COULD IT PLAY A PROGNOSTIC ROLE IN UNSELECTED NON-MUSCLE-INVASIVE BLADDER CANCER?

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Objective

Neutrophil-to lymphocyte ratio (NLR) has been considered an useful biomarker of systemic inflammatory response in several tumor types from several studies. In patients with muscle invasive bladder cancer (MIBC) undergoing cystectomy a higher preoperative NLR has been associated with poor prognosis and pathologic upstaging but its predictive value in non-muscle-invasive bladder cancer (NMIBC) up to date has been rarely studied with uncertain results. An independent association of NLR with unfavorable clinical outcome in selected patients with high-risk NMIBC, identifying patients failing intravesical immune therapy has been recently found by D'Andrea and coll (1). Our study had the aim to evaluate whether NLR could predict pathologic upstaging and recurrence in unselected patients undergoing transurethral resection (TUR) for primary NMIBC.

Materials and Methods

We reviewed the medical records of 162 consecutive patients submitted to TUR for primary NMIBC between January 2013 and December 2015. Informed consent and ethical committee approval were obtained. Exclusion criteria were presence of other malignancies, known autoimmune or inflammatory diseases, clinical evidence of advanced bladder cancer.

Statistical analysis: numeric values were compared by Wilcoxon-Mann-Whitney test. Chi-square test was used for the comparison of the non-numeric values. A NLR cut-off value of 3 according to recent literature was adopted (1). A p value <0.05 was considered statistically significant (Software R version 3.4.2)

Results

The study cohort comprised 142 (87.7%) men and 20 women with a median age of 70 (23-90) years. Fifty four (33.3%) patients were active smokers, 73 (45.1%) former smokers with a median number of 20 cigarettes per day and a median smoking period of 25 years, while 35 (21.6%) patients never smoked.

Out of 142 patients 32 (19.8%) received a pathological diagnosis of MIBC while 130 (80.2%) of NMIBC. Particularly, high-grade tumors were found in 76 (46.9%) patients. Among NMIBC, 30 T1 (23%), 3 Tis (1.9%) and 42 (32.3%) high-grade tumors were diagnosed. Tumors were multiple in 131 patients (80.9%). Tumor size was <2cm, between 2 and 5 and more than 5 cm in 81 (50%), 77 (47.5%) and 4 (2.5%) patients, respectively. The median NLR was 2.7 (range: 0.2-42.1).

At a median follow-up of 25 months (range: 3-48) 54 (39.9%) patients recurred. Mean time to recurrence was 12.9 months

We didn't find any correlation between NLR (cut-off of 3) and age (p=0.85), gender (p=0.38), smoking status (p=0.50), G-grade (p=0.24), tumor size (p=0.77) and the adoption of adjuvant intravesical therapy (p=0.48). Moreover, no correlation was detected between NLR and recurrence (p=0.17)

However, a statistically significant association was detected between NLR and multiplicity (single vs multiple) (p=0.018) and with T-stage (NMIBC vs MIBC) (p<0.005).

Discussions

Recent studies suggest that NLR could be an independent prognostic value in advanced bladder cancer and in high risk NMIBC. In our experience in consecutive patients undergoing TUR for a clinical diagnosis of NMIBC we found a statistically significant association of NLR with multiplicity and T-stage, both factors enhancing host immune response. However, we did not detect any relation between NLR and patients' outcome in terms of recurrence.

Conclusion

NLR seems not to have a predictive value for recurrence in unselected NMIBC treated in common clinical practice, even if related with tumor multiplicity and T-stage.

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4. CARBON AND ZEOLITE IMPREGNATED POLYESTER FABRIC INHIBITS URINE ODOUR: A RANDOMIZED EXPERIMENTAL STUDY

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Objective

Bladder cancer ranks fifth as the most common cancer in the world. Many individuals with bladder cancer have undergone a surgical urostomy and often complain of being self-conscious of the unpleasant smell of their own urine. The focus of this study was to test the efficacy of a pouch cover made of a carbon and zeolite containing polyester material to inhibit the smell of urine by comparing two trained dogs' response time in detecting volatile organic compounds (VOCs) in urine, with and without the fabric covering the samples.

Materials and Methods

This study used a randomized, blinded experimental design to evaluate the efficacy of a fabric to interfere with two highly trained dogs' ability to detect specific VOCs present in the urine of prostate cancer patient. Ninety urine samples were analysed in this study. Prior to the experiment, both dogs accurately detected VOCs in the uncovered test urine samples of men with prostate cancer with a sensitivity and specificity of nearly 100%.

Results

Both dogs recognized the "uncovered" urine samples of men with prostate cancer within two seconds. When the test sample was covered with the study fabric, the test urine samples were detected within 30-40 seconds and in some instances the dogs were not able to identify the covered samples, whatsoever.

Discussions

The continuous worrying about the unintentional detachment of the urinary stoma plate or bag leads patients to live in a constant state of alert in order to cover such eventuality. In some cases, this fear restricts patients conditioning their social relations. Although episodes of detachment are drastically reduced over time because of a better and consolidated management of the external urine collection device, the fear of a possible unintentional detachment still remains. Another aspect that may affect patients' QoL in the long term is the concern about losing their partners, who not only help them in the management of the stoma, but they represent a moral support of paramount importance. Anyway the most relevant aspect reported by the patients even after many years after surgery is the renunciation of even short trips because of the fear of losing urine. Many patients must be sure to always have everything they need for a proper management of the ostomy in any situation[1]. Industry are working developing malodor-controlling compositions comprising microcapsules containing an active material and/or an optional odor control agent, an odor control agent outside of the microcapsules, and aqueous carrier. The malodor-controlling compositions can be applied to surfaces, such as fabrics, to reduce or remove malodor from the surface and to provide a controlled-release of the active material onto the surface or into the environment surrounding the surface. The active material is preferably a perfume and the composition controls malodor and provides a controlled-release scent.

The invention further relates to methods of using malodor-controlling compositions comprising the step of contacting a surface with the malodor-controlling compositions [2].

Conclusion

The findings of this study demonstrate that the carbon and zeolite containing polyester fabric did significantly interfere with the ability of the dogs to detect VOCs in urine of men with prostate cancer. The fabric may show promise as a pouch cover in controlling offensive urine odour which many urostomates experience.

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5. THE USE OF THE "COMBAT BRS SYSTEM HIVECTM" IN THE TREATMENT OF HIGH-GRADE NON-MUSCLE INVASIVE BLADDER CANCER AFTER BCG FAILURE

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Objective

Adjuvant intravesical therapy has an important role in the prevention of bladder cancer recurrence and progression after the first TURB (trans-urethral resection of bladder) in NMIBC (non-muscle invasive bladder cancer). Patients with BCG failure are unlikely to respond to further BCG therapy. Radical cystectomy should be proposed in these patients (1).

The aim of this study was to evaluate the use of the "COMBAT BRS (Combined Antineoplastic Thermotherapy Bladder Recirculation System) SYSTEM HIVEC (Hyperthermic Intra-Vesical Chemotherapy)TM" in the adjuvant treatment of high-grade non-muscle invasive bladder cancer (NMIBC) after BCG (Bacillus Calmette-Guérin) failure.

Materials and Methods

From March 2017 to July 2017, 12 patients with high grade NMIBC (HG-NMIBC) after TURB and with BCG-refractory tumour (BCG failure) were enrolled. 4 out of 12 patients (33.3%) were twice BCG failure. Signed informed consent was obtained from all patients. The potential advantages and disadvantages of the HIVEC™ treatment were discussed with the patients. The current standard of care treatment according to guidelines, including radical cystectomy, was also offered. The treatment schedule consisted of six weekly intravesical instillations of HIVEC™ MMC (Mitomycin C) at a concentration of 40 mg MMC diluted in 50 mL of distilled water. The solution was heated to a target temperature of 43 °C and recirculated at 200 mL per min at stable pressure. The temperature inside the bladder was maintained at 43 °C ± 0.5 °C for the 60-min duration of the treatment. Five weeks after the end of the HIVECTM schedule, a cystoscopy under spinal or general anaesthesia (or RE-TURB) was performed. Patient tolerance of the procedure will be evaluated using the VAS (Visual Analogue Scale) scale. Mean values with standard deviations (±SD) were computed and reported for all items.

Results

The mean(±SD) age of the was 59.8±8.7 years. Out of the 12 patients, 9 were male and the remaining 3 were female. The mean(±SD) number of the tumours at the pre-treatment TURB was 7.3±1.5. Concurrent CIS (carcinoma in situ) was found in 4 out of 12 patients (33.3%). All patients had an high-risk bladder cancer according to EAU Guidelines and EORTC risk tables (2). No adverse events were observed during the HIVECTM treatment. The mean(±SD) VAS score was 0.7±1.2. At the follow-up cystoscopy 3 out of 12 patients (25%) experience a recurrence. In particular, two tumours (HG-NMIBC) with a maximum diameter of 2 cm and concurrent CIS were found in one patient. The patients was treated with a radical cystectomy. A recurrence [one tumor with a maximum diameter of 1.5 cm (HG-NMIBC) and two tumours of mean 2 cm of maximum diameter (LG-NMIBC), respectively] was found in two patients. They were enrolled to another cycle of HIVECTM (six weekly instillations). In three patients an acute and a chronic inflammation with reactive myofibroblastic proliferation was found. The others 9 patients were enrolled in a maintenance protocol (six instillations administered monthly). Red patches in the bladder were found at cystoscopy in 7 out of 12 patients (58.3%). The biopsy revealed a CIS only in the patient that underwent the radical cystectomy.

Discussions

In recent times, interesting data have been presented on enhancing the efficacy of MMC (Mitomycin-C) using microwave-induced hyperthermia or the efficacy of MMC using electromotive drug administration (EMDA) in patients with high-risk tumours including also patients with BCG failure. Despite this, these treatment modalities are still considered experimental (3). Compared to the microwave driven heating system the "COMBAT BRS SYSTEM HIVECTM" device seems to have less side effects without major complications. Treatment discontinuation was seen in 5% of the patients for Combat BRS System and about 40% of the patients for Synergo System (radiofrequency induced hyperthermia) (4).

The use of clinical hyperthermia in bladder cancer treatment has a clear rationale. First of all, the treatment at temperatures between 41 and 44 degrees C is cytotoxic for cancer cells because they cells are unable to manage the heat as well as good cells (5). Moreover MMC is 1.4 times more active at 43°C. The cytotoxicity increases by 10 times because the lipid-protein cellular membrane bilayer become more permeable to the MMC. Nevertheless hyperthermia does not increase the toxicity to the patient (6). Moreover hyperthermia inhibits the angiogenesis (7) and increases the activation of the natural killer cells that target heat stressed cancer cells as they signal heat shock proteins on the cancer cell surface (8).

Conclusion

In our experience, "COMBAT BRS SYSTEM HIVECTM" treatment is safe and effective for patients with NMIBC in adjuvant settings after BCG failure. Only one patients underwent a radical cystectomy. Moreover, in one patient we experienced a downgrading from HG-NMIBC to LG-NMIBC. In conclusion, the system can be a promising alternative to the radical cystectomy in a well-selected and well-informed group of patients. Some limitations of our study include the small cohort of patients and short follow-up time.

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6. EARLY COMPLICATIONS RATE IN FRAGILE PATIENTS SUBMITTED TO RADICAL CYSTECTOMY AND URINARY DIVERSION

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Objective

The aim of our study was to evaluate 30 and 90-days complication rate using prospectively a standardized methodology and comparing medical, nurse and administrative records.

Materials and Methods

We analyzed records of 145 consecutive patients who underwent radical cystectomy and urinary diversion at our Institution from January 2015 to June 2017. All patients were treated following a standardized protocol. Complications were classified according Clavier-Dindo and related to previous medical history, ASA score, Age Adjusted Charlson Comorbidity Index (ACCI), operating surgeon, blood loss, operative time, transfusions rate, type of urinary diversion, pre-operative and 3-days post-operative blood count and creatinine levels. Postoperative patients' mobilization time, nasogastric tube removal, free diet restarting were also evaluated. Furthermore complications were analyzed comparing medical and nurse records during hospital stay and at 30 and 90 days following patients' discharge.

Results

Our population had 4.18 male: female ratio with a 69.25 years mean age (median 71 ± 10.41), and a 26.51 mean BMI (median 26.30 ± 3.64). Median ASA score was 2 in 87 patients (60%) while the other 40% were ASA score 3 or more. Median ACCI was 6 with 82.76% of Patients having ACCI >4 and 33.8% of Patients having ACCI > 6. In our population of patients undergoing cystectomy, 102 received a Wallace external urinary diversion (70.34%), 29 (20%) an orthotopic ileal Bladder (VIP: Vescica Ileale Padovana) and 12 an ureterocutaneous diversion (8.27%). Two patients (1.37%) didn't received urinary diversion because radical cystectomy was associated to bilateral nephroureterectomy. Mean operative time was 349.75 min and mean blood loss 802.96 cc. Mean Patients' hospital stay was 18.54 days (median 16 ± 8.88) with 18.04 days in patients undergoing Wallace urinary diversion and 20.89 days in those undergoing VIP orthotopic ileal bladder. Among Patients submitted to VIP diversion, those living within 60Km from the hospital had a mean recovery length of 19.31 days while those living further had a longer (22.78 days) hospital stay. A significant difference in Patients' mobilization was observed between medical and nurse records (mean 3.73 days ± 2.62 vs 4.6 ± 2.77; p= 0.006). Re-admission rate was 5.5% and 2.76% at 30 and 90-day after patients' discharge. Relevant complications were observed in 56 patients (38.62%) during post operative hospital time. 29 complications were Clavier-Dindo 1-2 (51.78%) while 27 (48.2%) were Clavier 3-4. No Clavier-Dindo complication 5 was observed. Clavier-Dindo complications 3-4 did not relate to preoperative characteristics, ASA score and ACCI or operative parameters such as surgeon, operative time, blood loss and transfusion rate. Relevant complications were observed to be related to intestinal resection for urinary diversion. Post-operative ileum was observed in 16 patients (11%), requiring surgery in 62.5% of cases. Post-operative ileum was related to a longer bed rest following surgery. All patients with mechanical ileum were previously submitted to Wallace or VIP diversion and 60% had a previous abdominal surgery. Wound complication were observed in 11 patients (7.58%) and were associated to ACCI with 60% of Patients having ACCI > 6. No difference in complication rates was observed stratifying patients by urinary diversion type. Length of operative time was not associated with increased risk of intestinal or wound complication. Among patients re-admitted at 30 and 90 days we verified respectively a 37.5% and 50% rate of Clavier-Dindo 3-4 complications. Noteworthy all patients readmitted at 90 days had a pre-operative ACCI >6.

Discussions

Radical cystectomy is a complex procedure with high risk of perioperative complications and high readmission rates (1,2). In our study early Clavier-Dindo 3-4 complications did not relate to preoperative or operative parameters. Intestinal resection was the main reason of post-operative Clavier-Dindo 3-4 complications, while pre-operative ACCI >6 was related to wound problems. Operative time did not correlate to wound complication, probably because of a routine use of antibiotic recall after 4 hour of surgery. At our institution distance between patients' residence and hospital influenced hospitalization length. We experienced a low rate of hospital readmissions and all patients readmitted at 90-days had an ACCI > 6.

Conclusion

Our study shows that even in fragile patients with Age Adjusted Charlson Comorbidity Index >6, radical cystectomy and urinary diversion is feasible with a limited complication rate.

Our reports show a mismatching between medical and nurse records apparently due to trivial logistic problems. This finding calls for a higher degree of interaction between healthcare providers with meticulous planning of all supportive care interventions. Noteworthy a longer hospitalization time may reduce 30-90 days readmissions and Clavier-Dindo 3-5 complication rate, with fragile patients with ACCI >6 being more at risk for 90-days hospital readmission.

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7. A MODIFIED TECHNIQUE OF URETEROCUTANEOSTOMY IN PATIENTS WITH MUSCLE-INVASIVE BLADDER CANCER AND SEVERE URETERAL STRICTURE

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Objective

The ureterocutaneostomy (UCN) is the preferred diversion in the patients with a lot of comorbidities, or in the patients who have tumor in the urethra or at the level of urethral dissection. The use of an ileal segment has been previously described in the treatment of long-segment ureteral strictures (1). The aim of this study was to evaluate our experience in the use of a skin and muscle flap tube as an alternative procedure to perform ureterocutaneostomy (UCN) in this group of patients.

Materials and Methods

At our institution, from January 2013 to January 2016, five male patients with muscle-invasive bladder cancer and severe monolateral ureteral stricture underwent radical cystectomy and bilateral ureterocutaneostomy. One patients had previously undergone a radical cystectomy with Bricker ileal conduit urinary diversion and developed a long-segment and severe unilateral ureteral stricture after four months. We report a surgical technique in the management of patients with muscle-invasive bladder cancer and severe ureteral stricture who underwent radical cystectomy with UCN using a skin and muscle flap tube. All patients enrolled were not eligible for the use of bowel segments in the urinary diversion.

Results

Open transperitoneal radical cystectomy and bilateral pelvic lymphadenectomy were performed in all patients with a midline incision extending from the supraumbilical region to the symphysis pubis. In the patient with Bricker ileal conduit urinary diversion, the Bricker ileal conduit was first removed.

On the side of ureteral stenosis, an horizontal double-parallel incision was performed from the midline to the area of the ureterocutaneostomy creating a musculocutaneous flap. The flap was passed through the anterior abdominal wall and tubularized. The flap was finally anastomosed to the ureter using a Bracci ureteral splint and six interrupted 4-0 Vicryl sutures, Vicryl TM (Ethicon Inc., Sommerville, N.J.). The horizontal double-parallel incision was closed with silk sutures (Figure 1).

Mean age of the patients was 73.8(±1.9) years. Mean body mass index (BMI) was 28.6 (±2.3). Mean operative time was 162(±13) minutes. Mean blood losses were 320(±130.4) milliliters. No intraoperative complications are reported according to Satava classification. The mean length of hospital stay was 8.6±3.1 days. One out of 5 patients (20%) experienced a postoperative complication according to CD system (wound infection, grade II CD). No anastomotic leaks and stenosis were reported at a mean follow-up of 16.4 (±6.2) months and the Bracci ureteral splints were changed every four weeks.

Discussions

Radical cystectomy is considered one of the most extensive urological procedure. The overall postoperative mortality rate is 0.3%-7.9%. The age and the comorbidity profile of the patient seems to be independent preoperative predictors for 90-d mortality (2). Severe complications and the mortality rate are usually lower in the patients who underwent an UCN diversion compared to patients receiving bowel for urinary diversion (3).

The functional role of a skin and muscle flap tube can be valued especially in patients whose ureters are not enough long to realize an UCN. This technique can be a feasible way to solve the loss of tissue, avoiding the placement of a permanent nephrostomy tube. Moreover the technique can avoid the high risk of recurrent ureteroileal stenoses in the patients who have previously experienced an ureteral or an ureteroileal stenosis.

Conclusion

The use of a skin and muscle flap tube, can be a feasible and safe procedure in case of long-segment and severe ureteral strictures in patients who underwent radical cystectomy with UCN, in particular when the patients are not eligible for the use of bowel segments in the urinary diversion or when the patients are at high risk of morbidity and mortality.

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8. ROBOTIC INTRACORPOREAL INDIANA POUCH: PERIOPERATIVE AND 2-YR ONCOLOGIC AND FUNCTIONAL OUTCOMES OF INITIAL SERIES

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Objective

We previously demonstrated feasibility and safety of robot assisted radical cystectomy (RARC) with a completely intracorporeal Indiana Pouch. We report perioperative, oncologic and functional outcomes of first 10 patients with a minimum follow-up of 24 months.

Materials and Methods

Perioperative outcomes, 30-d/90-d/180-d complications were recorded and classified according to Clavien-Dindo classification system. Follow-up schedule included assessment of renal function at 3-mo intervals and CT scan at 6-mo intervals. Urinary continence was defined as absence of any urine leak from the stoma between catheterizations. Urodynamic evaluation was

performed 3 months postoperatively.

Results

There were no intraoperative complications and all procedures were successfully completed. Median hospital stay was 9 days. Final pathology showed extravesical disease (pT stage>2) in 3 patients (30%) and nodal metastases in 4 patients (40%). All surgical margins were negative. The overall incidence of 30-d complications was 40% (0% of grade ≥3). At 3-mo evaluation two patients (20%) developed hydronephrosis due to ureterocele stenosis, one requiring antegrade j-j stenting (Clavien grade 3A) and one (10%) requiring bilateral robotic ureterocele reimplantation (Clavien grade 3B). Two patients developed metastases, one at 3 months after surgery (lung), one at 1 year (retroperitoneal nodes). At a median follow-up of 28 months overall survival rate was 80% and disease free survival rate was 80%. At 3-mo follow-up evaluation urodynamic studies demonstrated a mean maximum capacity of 270mL without ureteral reflux and 9 patients (90%) reported a full continence 3 months after surgery. One patient required undiversion to ileal conduit due to inability to perform self-catheterization. At 2-yr functional outcomes evaluation, all patients (7) reported full continence and easiness to self catheterization; no patient developed urinary tract infections or pouch stones.

Discussions

We previously demonstrated feasibility and safety of robot assisted radical cystectomy (RARC) with a completely intracorporeal Indiana Pouch [1]. Safety and feasibility of intracorporeal IP, together with encouraging short term oncologic outcomes, support the potential role of RARC with intracorporeal continent cutaneous diversion as a viable option for patients with contraindication to orthotopic neobladders. Mid term functional outcomes are encouraging.

Conclusion

Safety and feasibility of intracorporeal IP, together with encouraging short term oncologic outcomes, support the potential role of RARC with intracorporeal continent cutaneous diversion as a viable option for patients with contraindication to orthotopic neobladders.

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9. URACAL TUMOUR ROBOTIC DA VINCI SURGERY: A CASE REPORT

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Objective

Urachal adenocarcinoma is a rare and aggressive tumor that arises from the urachus. An en bloc resection of the urachus is recommended with either a partial cystectomy. However, there is no standard laparoscopic or robotic surgical technique for its operative management. In the present report, we describe our robotic-assisted laparoscopic technique for the treatment of a primary malignant urachal tumor.

Materials and Methods

In January 2016, a 37-year-old male reported recurrent gross hematuria. A pelvic ultrasound revealed a mass of 23 × 21 × 26 mm at the bladder dome connected with an antero-superior supravescical median small cystic mass of 20 × 19 × 16 mm, confirmed by a gadolinium-enhanced MRI. Cystoscopy demonstrated an erythematous mass < 3 cm whose biopsy confirmed to be an urachal adenocarcinoma. Further studies showed no metastatic spread. After institutional multidisciplinary meeting, a partial cystectomy with en bloc resection of the urachus were decided.

After general anesthesia the patient was placed in Trendelenburg with arms against the body and legs in mid lithotomy position. Pneumoperitoneum was obtained through open technique, placing the camera trocar midline 8 cm above the umbilicus. Trocars for curved monopolar scissors (arm1) and bipolar forceps (arm 2) were placed 8 cm from each side of the midline at the level of the umbilicus. Trocar for Maryland grasper was placed at the left on the same line while assistant port (12 mm) was placed in the right side. Upon entry in the peritoneal cavity and the abdomen explored to exclude lesions, the dissection started from the internal part of the umbilicus, once the bladder was evidenced. The dissection was carried out cranially and laterally to the medial umbilical ligaments along the preperitoneal plane. Then an inverted V shaped incision form the internal umbilicus to the anterior bladder wall was performed. Bladder wall dissection began using the diathermy scissors 1 cm away from the tumor margin to identify the mucosa. The third arm was used to hold the bladder and served as a landmark. The urachus and the bladder resected part were removed to use endobag. The bladder was sutured in three layers using V lock 3-zero.

Results

Postoperative recovery was uneventful with removal of the drain on day 3 and the urinary catheter on day 10. Patient was discharged 4 days after surgery. The histological analysis of the specimen showed a pT2b moderately differentiated mucinous colloid adenocarcinoma of the urachus. Surgical margins were negative. 3, 6, 12 and 18 months after the operation, the patient was doing well with no sign of recurrence at the CT scan and flexible cystoscopy.

Discussions

Urachal cancers arise from the urachus which is an embryological remnant of urogenital sinus and allantoid that usually involutes before birth and remains as the median umbilical ligament connecting the umbilicus to the dome of the bladder. The median umbilical ligament, located in the space of Retzius between the transversalis fascia anteriorly and peritoneum posteriorly, is approximately 5–6 cm in length [1,2,3]. Urachal cancer often presents at an advanced stage and has a poor prognosis. Surgery is the only curative treatment modality for the non-metastatic urachal carcinoma [4]. The role of pelvic lymph node

dissection, radiation and/or chemotherapy is debatable in the literature [3]. An en bloc resection of the urachus and umbilicus is recommended with either a total or partial cystectomy [5,6]. Achieving negative surgical margins is crucial to achieve cure of urachal malignancies [7]. The excision of the umbilicus is considered imperative because it could be involved in 7 % of cases. The extent of bladder resection is also debatable. However, it seems that survival is significantly more associated with the stage of the disease at presentation and the surgical margins rather than the extent of bladder resection [3]. That's why bladder sparing techniques—understandably associated with less morbidity and better quality of life of patients compared to total cystectomy—are preferred.

Although open surgical approach has been favored for decades, the minimal invasive approach has gained interest because it is associated with less operative pain, faster recovery, and better cosmetic results.

In our opinion, due to the location of these tumors near the anterior abdominal wall and the importance of complete excision of the umbilicus and prevention of cancer spillage during the procedure, robotic-assisted transperitoneal approach should be the preferred approach. It allows direct access by only positioning the trocars 8 cm higher than the usual positioning for radical prostatectomy. A fine and precise dissection and a good view would facilitate dissection and avoid entering the urachus with the potential of spillage of the tumor containing fluid into the peritoneal cavity that would increase the risk of relapse. Distending the bladder with normal saline facilitates the dissection into the bladder wall to the level of the mucosa. The bladder should be completely emptied before cystotomy to minimize the risk of tumor spillage. The urinary catheter is clamped to avoid gas leak once the bladder is opened. The use of the third arm allows application of a controlled stable traction, thereby facilitating dissection, in a confined space, of the peritoneal and preperitoneal tissue from the transversalis fascia. This good exposure would help in avoiding the manipulation or entry of the tumor and would keep the limit of the tumor from inadvertently touching the surrounding viscera, thus preventing local tumor contamination and hematogenous tumor spread [8]. Furthermore, the use of the third arm to hold the bladder near the tumor boundaries before deflating and opening the bladder helps in rapidly finding the landmarks and preventing injuries to the opposing wall. It is noteworthy to mention that the bladder is kept attached to the anterior bladder wall which facilitate the dissection and minimize the manipulation of the tumor.

Conclusion

We demonstrate the feasibility of bladder sparing robot-assisted laparoscopic en bloc resection of urachus and umbilicus for urachal adenocarcinoma.

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10. A RARE CASE OF BLADDER SCHISTOSOMIASIS

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Objective

Most cases of urogenital parasitosis are registered in Africa. However, migration movements and travellers moving from developed to developing countries are responsible for leading to an increased incidence of genitourinary infections caused by parasites in the western world including Italy having serious economic and health implications. The importance of its early detection and treatment also results from its potential risk for development of bladder cancer. The most common presentation symptom is terminal haematuria, and when diagnosed, praziquantel is the treatment of choice. In this work we report a rare case of urinary schistosomiasis that happened in our centre.

Materials and Methods

In march this year a 21-year-old African American man with recurrent episodes of gross hematuria for 6 months presented to the clinic for evaluation. A thorough history revealed that the patient emigrated from Senegal to our country 6 months ago. Urine culture was negative for a urinary tract infection. Ultrasound revealed several lesions in the bladder. Biopsy of the bladder lesion revealed severe cystitis and *Schistosoma haematobium*. The patient later confirmed that he used to swim in rivers and streams back in Africa.

Results

Praziquantel 40 mg/kg is the most studied drug for treating urinary schistosomiasis, and has the strongest evidence base. In this case we used praziquantel for two months. The gross hematuria was resolved. The patient performed ultrasounds to evaluate bladder wall every month. Endoscopic evaluation performed after therapy showed a complete resolution of bladder lesions.

Discussions

Bladder schistosomiasis, also known as bilharzia of the bladder, is a major health problem in developing parts of the world predisposing individuals to squamous cell carcinoma. Schistosomiasis is very common, affecting over 200 million people, with the vast majority (85%) in Africa. It is prevalent in tropical and subtropical areas, especially in rural regions.

There are five species of the blood fluke (trematode worm) *Schistosoma* species that cause disease in humans: *Schistosoma*

haematobium, S. mansoni, S. japonicum, S. intercalatum, S. mekongi.

Larvae are released from snails (intermediate host) into water and penetrate human skin (definitive host) exposed to the infected water. These larvae travel to the lungs and liver of the human host, where they reside until they mature.

After maturation, the adult worm pairs travel to the pelvic veins. Eggs are deposited in the bladder wall vessels and incite a granulomatous response that results in polypoid lesions. The eggs may go on to incite a chronic inflammatory response and fibrosis, which is an important predisposing factor for squamous cell carcinoma (SCC).

Conclusion

In this abstract we report a case of urinary schistosomiasis that happened in our centre and reminds the importance of having the infection in mind in certain cases of haematuria. On average, the standard dose of praziquantel cures around 60% of people at one to two months after treatment, and reduces the number of schistosome eggs in the urine by over 95%.

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11. "ACTINIC CYSTITIS: CAUSES, TREATMENT AND EXPERIENCE OF A SINGLE CENTRE IN THE LAST FIVE YEARS"

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Objective

Actinic cystitis (AC) is the manifestation of symptoms and signs such as hematuria, pain during urination, chronic pelvic pain, or clinical-pathological situations such as incontinence, hydronephrosis in impaired bladder capacity and renal failure following pelvic radiotherapy. Pelvic radiotherapy produces both acute and chronic damage and such damage may have a devastating impact on the quality and on amount of life of the patient. Patients with AC are 5-10% of patients subjected to radiotherapy [1,2]. The pathophysiology can be divided into three distinct phases:

- 1) a short acute phase that lasts until a few weeks after radiotherapy;
- 2) a symptoms free phase, physical well being;
- 3) a irreversible phase, characterised by a late chronic damage [3].

Clinical symptoms and signs such as hematuria, pain during urination, chronic pelvic pain, could begin until 15 years after radiotherapy [4]. AC is often associated with prolonged hospitalization and significant morbidity. It may require aggressive measures such as radical surgery like cystectomy and urinary diversion. This is successful to stop hematuria and reduces chronic pelvic pain [5].

We bring our experience in a high volume centre (over 35 cystectomies/year).

Objectives are to evaluate the number of radical cystectomies that have become necessary in the last five years in our department for AC after radiation treatment; to evaluate the characteristics of the patients, and in particular the type of primitive cancer, the radiation dose used during radiotherapy, the time between radiotherapy and cystectomy, and the motivation that required the surgery.

Materials and Methods

From February 2012 to February 2017, 11 patients underwent "open" cystectomy for AC. All patients were studied with radiographic examinations (cystogram and contrast-CT scan of abdomen) and endoscopy prior to surgery. We retrospectively evaluated the kind of primitive cancer, the radiation dose administered, the time between radiation treatment and cystectomy. We also studied the related symptoms that required surgery.

To define symptomatology, we defined haemorrhagic haematuria as the haematuria that required the administration of more than two blood transfusions (with haemoglobin values ≤ 8 g/dL). We defined incontinence as the use of more than one diaper a day. We defined kidney failure as the situation when glomerular filtration rate is below 60 mL/min. Chronic pelvic pain was evaluated by an anaesthesiologist according to the multidimensional scale Brief Pain Questionnaire. The data were collected at our hospital.

Results

The mean age at the time of cystectomy was 75 year old. In six patients (54.4%) radiotherapy was performed for prostate cancer, in two patients (18.1%) for rectal cancer, in three patients (27.2%) for endometrial cancer. Total radiant dose was different in different patients, and it depended to different kind and localization of cancer. The median time between radiotherapy and cystectomy was 111 months (24-256 months). All patients had symptoms before surgery. Seven patients (63.3%) with gross hematuria were treated with endoscopic clot evacuation and fulguration before be subjected to cystectomy.

Discussions

The first approach to patients with AC is often supportive care. Supportive or conservative therapy include: hyperhydration and continuous bladder irrigation with physiological solution, chondroitin sulfate, sodium hyaluronate, sodium pentosanpolysulphate prostaglandins, formalin, alum irrigation; systemic treatments such as hyperbaric oxygen therapy, estrogen administration, coagulation factors (VII or VIII) and aminocaproic acid; endoscopic therapy with evacuation of clots and fulguration. Surgery remains the most invasive treatment in the management of those patients who are not responsive to these treatments.

Conclusion

The first approach to patients with AC is often supportive care, AC could have a devastating impact on quality of life of the patient. Surgery remains the most invasive treatment in the management of those patients who are not responsive to conservative treatments.

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12. DOES URODYNAMIC EXAMINATIONS REPRODUCE CLINICAL REALITY? CAN URODYNAMICS INFLUENCE TREATMENT OF OVERACTIVE BLADDER? OUR EXPERIENCE

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Objective

To investigate the role of urodynamic study in female patients with non-neurogenic overactive bladder (OAB), correlation between overactive bladder symptoms and urodynamic findings and its influence on conservative therapy.

Materials and Methods

A retrospective study, performed at Urological Division of Istituto Clinico Città Studi in Milan, included female (mean 53,7) subjects with overactive bladder symptoms who underwent urodynamic evaluation by a single urologist between October 2012 and October 2017. Patients with previous anti-incontinence surgery, anatomic or neurogenic bladder were excluded. We analyzed the urodynamic data of 205 women with OAB symptoms. OAB symptoms were divided in two groups, dry and wet. Urodynamic results were compared between patients with dry and wet symptoms. After urodynamic tests, all patients were treated with antimuscarinic drugs (fesoterodin). We have ruled out a bladder outlet obstruction by uroflowmetry with post voiding residual.

Results

A total of 205 patients with OAB were included in this study. Patients with OAB and wet symptoms was 170 and subjects with OAB dry was 35. In our experience, the detrusor overactivity (DO) were detected in 123 patients of 205 (60%); patients with OAB "wet" and DO were 100 (81,5%); patients with "dry symptoms" and DO were 18,8 % (23 patients). The prevalence of DO in patients with OAB "wet" were 100/170 (64.8%); the percentage of DO in patients with "dry symptoms" were 65.7% (23/35 patients). Low compliance bladder (LCB) was found in 15 patients without DO and urge incontinence and 5 patients without DO and dry symptoms. 65% of the women (all groups) considered their bladder problems to have improved regardless of urodynamic findings or choice of antimuscarinic drug.

Discussions

Overactive bladder (OAB) is a common problem. It is reported that a significant percentage of patients with symptoms not have unstable bladder contractions on provocative cystometry. It has been well documented that only 30-60% of patients with symptoms of OAB are found to have detrusor overactivity at cystometric exam. In our study, the detrusor instability is detected in 81.5% of women with urge incontinence with conventional cystometry. In women for whom local and system pathologies can be ruled out by the initial diagnostic procedure for LUTS, it is common practice to administer conservative treatment and oral pharmacotherapy for OAB without further investigation using urodynamics. This is because the response to antimuscarinic therapy does not differ between OAB patients, with and without urodynamic diagnosis. (1) NICE guidelines do not recommend performing urodynamics to commence conservative measures. (2) TS Verghese et al. demonstrated that urodynamic diagnoses appear to have greater reductions in symptoms than who do not (3) Instead, Nitti et al. showed that the response to antimuscarinic therapy in patients with OAB symptoms was independent of the urodynamic diagnosis of DO. (4) Our study confirms last hypothesis. Limitations of our study is reduced number of patients.

Conclusion

Conventional cystometry showed not complete co-relation with lower urinary tract symptoms and, in our experience, its finding does not alter the treatment (conservative measures) outcome of the patients with symptoms of overactive bladder. Cystometry should only be reserved for confuse clinical diagnosis, conservative treatment failed and before surgery.

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13. ADVANCE MALE SLING IN THE TREATMENT OF MALE URINARY STRESS INCONTINENCE: OUR EXPERIENCE

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Objective

Radical prostatectomy is regarded as the gold standard surgical treatment for organ confined prostate cancer. Even though the surgical technique has been improved steadily stress urinary incontinence (SUI) is a well-known side effect of this procedure with reported incidence rates of up to 20%. The synthetic transobturator sling (AdVance male sling, American Medical Systems, Minnetonka, MN, USA), introduced in 2006, is a safe and effective minimally invasive treatment for mild/severe SUI in male patients. This study was performed to evaluate functional outcome of the AdVance male sling in the treatment of SUI caused by prior prostate surgery.

Materials and Methods

From June 2012 to January 2017, 51 patients with stress urinary incontinence after prostate surgery were treated with AdVance male sling in the our Department of Urology. All patients had undergone radical prostatectomy for prostate cancer. The implantation of the male sling system was performed at least 6 months after initial treatment. Preoperative work-up included physical examination, uroflowmetry (Qmax), postvoid residual urine (PVR) and flexible urethroscopy to assess sphincter function and mobility of the membranous urethra. ICIQ-UI SF score, a validated self-report questionnaire, was assessed to evaluate urinary incontinence and its impact on quality of life. Degree of incontinence was classified by the number of pads used per 24 hours and categorized in 3 grades (mild: 1-2 pads/24h; moderate: 3-5 pads/24h; severe: >5 pads/24 h) patients were re-evaluated after 3, 6, and 12 months concerning the number of pads used daily, the current ICIQ-UI SF score, Qmax and PVR. Cure was defined as no pad usage, improvement was defined as a use of 1-2 pads/day or ≥50% reduction of the preoperative pad use.

Results

Based on pad test results at last follow-up the cure rate (no pad usage) was 74.5% (38 of 51 patients). The improvement rate (1-2 pads/day or ≥50% reduction) was 9.8% (5 patients). The success rate was durable since only one patient initially classified as cured at the 3-month visit subsequently had to use pads again in the course of follow-up. Overall mean pad use decreased from 5.0 ± 1.3 to 1.1 ± 0.7 pads daily ($p < 0.001$). The ICIQ-UI score improved from a mean of 14.9 ± 3.5 before sling implantation to 5.1 ± 6.3 after surgery ($p < 0.001$). No changes in postvoid residual urine (PVR) were observed after surgery (7.3 ± 12.8 mL vs 11.0 ± 19.0 mL; $p \geq 0.05$). Uroflowmetry demonstrated significant decreased Qmax rates (mean: 20.1 ± 11.9 versus 25.9 ± 18.6 mL/sec) after sling implantation ($p < 0.001$). No perioperative serious complications occurred with the exception of 1 (1.9%) case of external iliac artery injury and 4 (7.6%) cases of urethral-bladder injuries. Postoperative acute urinary retention was seen in 5 patients (9.8%). All of these patients were treated with a transurethral catheter. In all cases the catheter could be removed after 1-2 weeks without further treatment with residual urine ≤50 mL at time of catheter removal.

Discussions

The artificial urinary sphincter (AUS) is considered the gold standard in the treatment of post prostatectomy incontinence, however, there is a need for less invasive treatment options. On one hand, there is a significant re-operation rate > 35% after 10 years in patients with AUS implantations even in experienced hands(1). One may consider a less invasive treatment form. In addition, some men do not have sufficient fine-motor control or the motivation to operate the implanted pump used with an AUS. Male slings provide an alternative surgical treatment for patients with SUI who are not AUS candidates or who elect not to undergo AUS placement.

The AdVance male sling is a non-compressive retrourethral sling that is believed to support the dorsal structure of the sphincter. Interestingly, the recently published data show varying success rates after AdVance male sling placement: While some authors report success rates between 60-80%(2), others observed no improvement in 36.5% and even worsening in 9%(3). The most common side effects after AdVance male sling implantation occur frequently and consist of postoperative perineal pain and urinary retention. urgency is a well-known complication after placement of midurethral slings and is attributed to obstructive or locally irritative causes. few cases of infection or erosion are reported in the literature.

Conclusion

The AdVancemale sling represents a safe and effective treatment option for patients with post-prostate surgery SUI

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