Moderated Video Session
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VID-01
Robotic Inferior Vena Cava Thrombectomy

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Introduction and Objectives: Inferior vena cava (IVC) thrombus is present in 5% of renal cell cancers and its presence indicates an aggressive cancer. Experience with open surgery has demonstrated that complete surgical removal of the kidney and tumor thrombus offers the best long-term oncological outcomes. Survival is driven by the stage of the primary tumor and invasion of IVC wall by the thrombus. A minimally invasive laparoscopic approach has been described for a level 1 thrombus, however there are no reports of robotic or laparoscopic management of level 2 tumor thrombus. In this video, we report our technique and tips for a pure robotic right radical nephrectomy and level 2 IVC thrombectomy.

Methods: Our patient was a morbidly obese 57 year-old male who presented with hematuria and was found to have a large upper pole renal mass and a tumor thrombus extending up to the liver. The surgery consisted of wide mobilization of the retrohepatic IVC, control of the right renal artery in the interaortocaval space, division of all lumbar veins to adequately mobilize the IVC and use of Rommel loops to control the left renal vein and IVC above and below the thrombus.

Results: Console time was 3 hours EBL was 150 cc. No JP drain was placed. There were no complications within the peri-operative or follow-up period. Diet was resumed on post-op day 1 and the patient was discharged on post-op day 2. He is doing well with no recurrence at 4 months follow-up. Pathology revealed a pT3bN0Mx clear cell RCC with Fuhrman grade 3 and negative surgical margins.

Conclusions: Robotic IVC thrombectomy is safe and feasible for retrohepatic level 2 tumor thrombus. Meticulous pre- operative planning ensures a smooth surgery free of complications. Control of lumbar veins is essential to provide full mobilization of the IVC both superiorly and inferiorly. Post-operative care pathway is no different from that for a standard radical nephrectomy.

VID-02
Laparoscopic Partial Nephrectomy: A Step-By-Step Procedure Description

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We present a step-by-step description of a partial nephrectomy in a male patient, presenting a 3.5 cm right kidney tumor located in the inferior pole. The description shows the trocard positioning, trans-peritoneal approach of the retroperitoneum space, with anatomic landmarks needed for a safe dissection of the renal hilum.

Tumor exposure is then performed before clamping the renal artery, by removing Gerota's fascia facing the tumor. Partial nephrectomy is a race against time as the warm ischemia time should not exceed 30 min.

All tips and tricks have to be anticipated before clamping, material ready and easy to use, tumor exposed, sutures allowing fast and efficient urostasis and haemostasis is described, using running sutures secured at each end by HemoLock clips to avoid doing intracorporal knots and save time.

A deep suture is first performed followed by a more superficial, parenchymatous one. The artery is then unclamped, haemostasis verified and a haemostatic sponge is applied on the surgical field. We used a Tachosyl sponge showing a very useful technique to manipulate the sponge under laparoscopy by rolling it in a plastic sheet and bring it inside throught the trocard without any problem.

The end of the video shows the Gerota's fascia closure, extraction of the tumor and macroscopic verification of the surgical margins.

It is a very comprehensive video on the technical aspects of laparoscopic partial nephrectomy, a challenging surgery, with no sound in order to comment it during an oral presentation.

VID-03
Case Report of Robotic Assisted Laparoscopic Adrenalectomy with IVC Thrombectomy

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Introduction and Objective: We present the first reported case of a robotic assisted laparoscopic adrenalectomy (RALA) with IVC thrombectomy in a 67 year old patient with isolated metastatic renal cell carcinoma in the contralateral adrenal gland. As an oncologic procedure, various important principles described in open surgical techniques were replicated robotically. This video demonstrates the feasibility of these various techniques including proximal and distal cross clamping of the IVC, controlled cavotomy, IVC thrombus resection and IVC closure.

Methods: This case report involves a 67 year old Hispanic female with multiple comorbidities including non-insulin dependent diabetes mellitus, hypertension, hyperlipidemia, asthma and morbid obesity (BMI of 50 kg/m^2). She initially presented to her local urologist with an incidentally discovered left renal cortical neoplasm with contralateral adrenal metastasis. She underwent a left open nephrectomy in 2009, demonstrating pT2 clear cell renal cortical neoplasm. She presented to MSKCC after her primary resection. After progression of her adrenal gland tumor despite therapy with sunitinib, the patient elected for RALA with IVC thrombectomy.

Results: The operation lasted 7 hours 4 minutes and included preoperative endovascular placement of an IVC balloon device proximal to the adrenal vein thrombus as a precautionary measure. EBL for the procedure was 200 mL. The patient was discharged on post-operative day one and her post-operative course was without complications or transfusions.

Conclusions: This case represents the first reported laparoscopic adrenalectomy and IVC thrombectomy using robotic technology. Significant surgical experience is required prior to proceeding with such an operation. Patients undergoing this procedure may benefit from the minimally invasive approach. This procedure should only be performed robotically, however, if the surgeon can safely proceed without compromising sound oncologic surgical principles.

VID-04

Laparoscopic Retroperitoneal Post Chemotherapy Residual Testis Cancer Mass Excision

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We present a video on laparoscopic RPLND in a young male for residual testis cancer mass after chemotherapy for a NSGCC.

Indication of laparoscopic approach in this challenging surgery is debatable and should be proposed only in very selected cases and performed by experienced laparoscopic teams.

The video shows a laparoscopic transperitoneal approach of a 3 cm residual mass located on the left side of the aorta, below the left renal pedicle. A progressive dissection along the psoas muscle allowed a preservation of the left ureter, a total excision of the mass stucked along the aorta. It shows how important could be the fibrosis reaction of testis tumors following chemotherapy, the need to expose upper and lower limits of the tumor, control the vascularisation with special attention to lumbar vessels.

A superior lymphostasis is critical in order to avoid post-operative lymphocele or peritoneal chylum.

The end of the video shows the extension of the LN dissection along the left common and superficial iliac vessels, tumor extraction and surgical field drainage.

VID-05

Robot Assisted Radical Prostatectomy Using the Harmonic Ace Curved Shears

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Introduction and Objectives: The Harmonic Ace Curved Shears (Ethicon Endo-Surgery, Cincinnati, OH, USA) has previously been described as a versatile and efficient instrument for dissection and coagulation, allowing for excellent hemostasis while minimizing thermal spread and co-lateral tissue damage. In this video, we demonstrate the use of Harmonic Ace Curved Shears during Robot Assisted Radical Prostatectomy.

Methods: Between June and September 2010, 46 patients underwent Robot Assisted Radical Prostatectomy using the Harmonic Ace Curved Shears. Median age was 60 years, median pre-operative PSA was 4.7 ng/mL; 50% of patients had Gleason 6 disease and 80.4% were T1C at diagnosis.

Results: Median operative time was 143 minutes and median console time was 110 minutes. Median estimated blood loss was 100 mL and median length of stay was 1.0 day. We noted excellent hemostasis and decreased smoke production with the harmonic shears and no effect on peri-operative outcomes including need for bladder neck reconstruction or cystogram leakage at 1 week. Pathologic characteristics were consistent with our historical experience.

Conclusions: We have found Robot Assisted Radical Prostatectomy with the Harmonic Ace Curved Shears to have several benefits, including improved visibility and decreased smoke production, without compromising perioperative outcomes. Prospective functional outcomes are currently under evaluation.

VID-06

Urethrovesical Anastomosis Using Barbed Suture During Robot Assisted Radical Prostatectomy (RARP)

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Introduction and Objectives: Barbed polyglactin suture (V-Loc®, Covidien, Mansfield, MA, USA), was first used for the urethrovesical anastomosis during RARP beginning January 2010. Safety and feasibility were previously demonstrated in 51 patients. In this video, we demonstrate the technique of urethrovesical anastomosis with barbed suture and the results of a randomized controlled trial assessing perioperative and functional outcomes after urethrovesical anastomosis with barbed polyglyconate vs monofilament Poliglecaprone in robot assisted radical prostatectomy (RARP).

Methods: Between May and September 2010, 64 patients meeting all inclusion criteria, participated in this multi- surgeon prospective, randomized, controlled trial. Posterior repair and urethrovesical anastomosis during RARP were performed with barbed polyglyconate (n=33) or monofilament poliglecaprone (n=31) suture. Primary outcomes were anastomotic (UVA) and posterior reconstruction (PR) time. Secondary outcomes included cystogram leak, bladder neck reconstruction rate and six week functional outcomes assessed by patient administered questionnaire.

Results: PR was performed in 3.3 min. vs 4.3 min (a 23.3% reduction) and UVA was performed in 10.1 vs 13.8 min. (a 26.8% reduction). The absolute time difference for the 2-layer anastomosis was 4.7 minutes. All other perioperative outcomes were equivalent between groups. Patient urinary functional outcomes including pad usage and leakage rates were equivalent at 6 weeks.

Conclusions: Anastomosis during RARP with barbed polyglactin suture can be performed safely, and more efficiently than with standard monofilament suture. We demonstrated a 25% decrease in anastomotic time with no increase in adverse events, no instances of urinary retention and equivalent functional outcomes measured by patient administered questionnaire.

VID-07

180W GreenLight XPS™ Laser Photoselective Vaporization of the Prostate (PVP) for Symptomatic Benign Prostatic Hyperplasia (BPH)

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Introduction and Objectives: We describe the enhanced features, our surgical technique and early clinical results of the recently FDA-approved 180W GreenLight XPS™ laser system and Moxy™ laser fiber.

Methods: The novel features of the 180W GreenLight XPS™ laser system are highlighted, with description of our surgical technique. In brief, cystoscopy is performed with the patient under general anesthesia in dorsal lithotomy. With vaporization set at 180W (lower power for smaller glands) and coagulation set at 30W, a line of vaporization is created in the right lateral–median lobe junction from the bladder neck to verumontanum, marking the proximal and distal limits of vaporization. The remainder of the lobe is vaporized using a series of overlapping passes along the length of the groove. The left lobe is vaporized in a similar manner, leaving median lobe vaporization for the final stage of the procedure. At the conclusion of the procedure, a 20F urethral catheter is placed.

Results: The 180W GreenLight XPS™ laser system enhancements include the higher power and increased laser beam diameter of the Moxy™ fiber. FiberLife™ and Active Cooling Cap™ technologies help to increase fiber longevity (400,000 kJ) by detecting and stopping fiber over-heating and supplying cooling saline, respectively. Initial product evaluation in 8 patients using our technique resulted in an approximately 50% shorter laser time compared to the GreenLight HPS™ laser system and significant improvements in subjective and objective clinical outcome parameters. No adverse events were noted.

Conclusions: The enhanced features of the 180W GreenLight XPS™ laser system appear to allow for efficient and effective vaporization of obstructive BPH with minimal patient morbidity.