ROBOT ASSISTED RENAL ALLOGRAFT NEPHRECTOMY: A SERIES

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(Presentation to be made by Kelli X. Gross, MD)

Introduction and Objective: Open renal allograft nephrectomy is a technically challenging procedure in part due to dense scar tissue at the incision. Robot assisted renal allograft nephrectomy allows for a transperitoneal approach which may provide easier dissection and access to the vascular anastamoses. A robotic approach may also provide multiple benefits of minimally invasive surgery.

Methods: We present a video of our technique for robotic renal allograft nephrectomy. We begin by placing a supraumbilical camera port, two robotic arms on the right, one robotic arm on the left, and two assistant ports opposite the side of the allograft kidney. The common iliac vessels are identified and dissected to the external iliac vessels. A split and roll technique is used to dissect the external iliac vessels to the arterial and venous transplant anastomoses. The perivesical space is developed using the medial umbilical ligament as an anatomic landmark. The renal artery and vein are divided with a endoscopic linear cutting stapler. Here we are careful to be aware of the course of the iliac vessels so they are not inadvertently transected during this step. Finally the graft ureter is ligated and divided and the kidney is mobilized from the surrounding tissue.

Results: Six patients underwent robot assisted renal allograft nephrectomy. One patient had nephrolithiasis secondary to primary hyperoxaluria in a nonfunctioning allograft. One patient had an inflammatory process that was found to be xanthogranulomatous pyelonephritis. The remaining patients had infections or pain in a nonfunctioning graft kidney. No major intraoperative or perioperative complications occurred in our patient group.

Conclusions: Robot-assisted renal allograft nephrectomy is feasible and may allow for improved dissection of the vascular anastomoses. The challenging anterior dissection and the vascular dissection is facilitated by the robotic approach.

Source of Funding: None

ROBOT ASSISTED RENAL TRANSPLANT URETERONEOCYS-TOSTOMY

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(Presentation to be made by Kelli X. Gross, MD)

Introduction: Anastomotic ureteral strictures are one of the most common complications after kidney transplantation and can be difficult to manage. Open surgical intervention provides durable cure and has a high success rate. However, it is technically challenging and associated with more morbidity than endourologic methods. We present a video describing our technique in performing robot assisted renal transplant ureteroneocystostomy.

Methods: All procedures were performed through the collaboration of our urology and transplantation surgical teams. We proceeded with a transperitoneal approach in dorsal lithotomy position. Ports were placed in a similar location to robot assisted radical prostatectomy. This video will highlight the technical aspects of this procedure, including: (1) identification of the transplanted ureter, (2) proximal and distal dissection of the ureter, (3) techniques of approximation of the distal end of the transplanted ureter to the bladder, and (4) urethrovesical anastomosis.

Results: Location of the transplanted ureter is variable and can be identified after careful dissection of the paravesical space. This should not be confused with the medial umbilical ligament, vas deferens or native ureter. Preoperative stenting and intermittent filling of the bladder during dissection can help its identification. It is important to ensure complete excision of the stenotic ureter to prevent recurrence. The bladder wall defect should be closed and a stented, spatulated, tension-free, watertight anastomosis should be done with absorbable suture. In order to bridge the gap between the distal end of the ureter and the bladder, techniques including psoas hitch, release of the contralateral pedicle, as well as release of the transplanted kidney from the anterior abdominal wall may be utilized. The plane between the transplanted kidney and the anterior abdominal wall is an avascular plane that can be relatively easily to develop.

Conclusions: Robot assisted ureteroneocystostomy can be performed with acceptable initial results and the robotic platform provides the benefits of early recovery.

Source of Funding: None

ROBOTIC ASSISTED URETERAL REIMPLANT WITH BOARI FLAP

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(Presentation to be made by Dr. Catherine J. Chen)

Objectives: Iatrogenic ureteral injuries are a possible complication of abdominopelvic surgery with an incidence ranging from 0.5% to 10%. Management of ureteral injuries depends on the timing of recognition as well the location of the injury. When recognized intra-operatively, the ureter can be repaired primarily or stented. With delayed recognition, additional complications such as urinomas, abscesses, and renal failure can occur. Distal ureteral injuries can be managed with ureteral reimplant with or without psoas hitch and a Boari flap can provide additional length. Important surgical principles for successful repair include good blood supply as well as a tension free anastomosis. These cases are often challenging because of inflammatory and fibrotic changes secondary to a previously operative field.

Methods: A 56 year old female was referred to our clinic for delayed management of a midureteral injury. She had undergone a colonic resection for diverticulitis and developed an anastomotic bowel leak. Unfortunately, she had an unrecognized ureteral injury that occurred during her exploratory laparotomy for the bowel leak. Her ureteral injury was only discovered when she presented with abdominal pain and was found to have a large urinoma. She was subsequently managed with a percutaneous nephrostomy tube. On antegrade nephrostogram, contrast was seen to the level of the superior boarder of L5. On retrograde pyelogram, there was significant gap noted. Thus, she underwent robotic assisted ureteral reimplant with Boari flap. Total operative time was 5 hours and total robot console time was 4 hours, including 30 minutes of lysis of adhesions.

Results: The location of the ureteral injury was identified and the ureter was resected back until there was good vascular supply. The contralateral bladder pedicle was taken to better mobilize the bladder. A flap was created, measuring at least 3 centimeters wide to ensure patency of the flap. At the apex of the flap, a cystotomy was made and an ureteroneocystostomy was completed over a double J ureteral stent. The Boari flap was then closed in two layers and found to be watertight. There were no intraoperative or postoperative complications. She was discharged home on postoperative day 2. Prior to discharge, her drain was checked for creatinine and found to be consistent with serum and removed. Her stent was removed in clinic on 4 weeks post-operative. On follow-up ultrasound, there was no hydronephrosis. The patient reported no flank pain or urinary complaints. She had excellent bladder capacity.

Conclusions: Robotic ureteral reimplant with Boari flap is a feasible, safe, and effective option for midureteral injuries.

Source of Funding: None

ROBOTIC URETEROILEAL REIMPLANT FOR BENIGN ANASTOMOTIC STRICTURE

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(Presentation will be made by Dr. Michael Patton)

Objectives: In this video, we demonstrate a robot-assisted surgical approach for correction of benign ureteroileal anastomosis stricture. Ureteroileal anastomotic strictures develop in 3 - 14% of patients undergoing urinary diversion. Though endourologic intervention is often attempted initially, success rates are typically less than 50% for strictures greater than 1 cm. While obviously more invasive, open surgical repair for benign strictures results long term success rates in greater than 75%. Previously, six cases of robotic repair, and more recently eleven cases of pure laparoscopic repair have been described with minimal blood loss and outcomes similar to open ureteroileal reimplant.

Our index patient is an 82-year-old gentleman with multiple comorbidities including COPD, atrial fibrillation, previous TIA, heart disease with bypass surgery in the last year and a subsequent myocardial infarction mandating use of plavix and aspirin. His urologic history is significant for robotic cystectomy and ileal conduit for muscle invasive urothelial carcinoma. Postoperative loopogram two months after cystectomy demonstrated no reflux to the left collecting system so a left percutaneous nephrostomy tube was placed. Antegrade nephrostogram confirmed a 1-cm stricture at the left ureteroileal anastomosis. Intervention was initially deferred due to his comorbidities, but the patient developed urosepsis twice. Given the extensive comorbidities of the patient we elected to offer the patient a robot-assisted repair of his ureteroileal stricture.

Methods: The patient was positioned the low lithotomy position. Foley catheter was placed in the conduit. Insufflation was obtained with a Veress needle and ports were placed in a line across the mid-abdomen, approximately 3-cm above the umbilicus. Moderate adhesions were noted upon entering the abdomen and laparoscopic scissors were used to address these before robot docking. Great care was taken to preserve the vascular supply to the conduit. The left ureter was identified adjacent to the iliac vessels in the expected trajectory and there was noted to be fibrosis in the distal portion of the ureter at the site of insertion. Saline injection into the nephrostomy tube helped delineate the stricture. The distal ureter was excised with a border of ileum and frozen section was negative for malignancy. The defect was oversewn with 2-0 Vicryl and the conduit was filled with no evidence of leak or narrowing of the lumen. The healthy segment of ureter was then spatulated and we then performed a new ureteral ileal anastomosis in an end-to-side fashion with a running 4-0 Monocryl suture. Half way through the anastomosis, a single-J urinary diversion stent was placed in a retrograde fashion. The anastomosis was tested and confirmed to be water tight. Postoperatively the patient was left with a JP drain, nephrostomy tube and a nephro-uretero-ileal stent.

Results: Total operative time was 2:00 hours including 22 minutes lysis of adhesions. Estimated blood loss was 50 mL. Final pathology from the excised segment demonstrated benign tissue with scarring. The patient was given a regular diet on postoperative day one, and JP drain was removed prior to discharge on postoperative day two. The stent and nephrostomy tubes were serially removed two weeks later and follow up CT loopogram at four months showed proper reflux with no evidence of obstruction.

Conclusions: To our knowledge, we present the first video describing the technique for robot assisted ureteroileal anastomotic stricture excision and ureteroileal reimplantation. Urologic surgeons experienced with robotic cystectomy should consider this minimally invasive approach for repair ureteroileal strictures in select patients.

Source of Funding: None

VAGINAL WALL SLING: PILOT STUDY OUTCOMES AND VIDEO DEMONSTRATION OF TECHNIQUE

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(Presentation to be made by Dr. Isaac Kelly)

Introduction: Since the FDA released a safety update on synthetic mesh used for treatment of pelvic organ prolapse and stress urinary incontinence (SUI) in 2011, slings have been the gold standard to treat SUI. Benefits of mesh include its unlimited supply and consistent quality. Side effects include dyspareunia, pelvic pain, urinary tract infection, and possible erosion. The FDA safety update encourages providers and patients to discuss non-mesh options, such as utilizing autologous sling grafts. Utilizing vaginal epithelium as a sling has been reported in the peer-reviewed literature. We aim to evaluate patient satisfaction in our patient population, who received an autologous suburethral sling using vaginal wall epithelium for the treatment of SUI, as well as to demonstrate the technique for the harvest, tailoring, and placement of the vaginal wall sling with an instructional video.

Methods: A retrospective review was performed in patients, who received a retropubic vaginal wall sling for the treatment of SUI between May 2011 and July 2015. The instructional video presents the technique of sling placement. A telephone survey was performed postoperatively to assess patient's current voiding symptoms and satisfaction, measured using a Likert Scale (1= very dissatisfied, 5= very satisfied). Mann-Whitney U test and Fisher's Exact test were used for statistical analysis, with a $p<0.05$ considered significant.

Results: Vaginal wall sling placement was performed in 52 patients. The mean age was 51 years (29-86), BMI was 28.9 (21-45), and number of vaginal deliveries was 5 (range 0-8). Mean sling length was 8.5 cm (range 5.5-11 cm).

Average preoperative pad usage was 1.03/day (range 0-10), which decreased to 0.6/day (range 0-3; $p=0.019$). 21 patients (68%) participated in a phone survey at a mean of 308 days postoperatively (range 24-657 days), where 14 (67%) reported zero pad usage, 5 (24%) used 1-2 pads/day, and 2 (10%) used >2 pads/day.

Patient's mean satisfaction postoperatively was 4.0 (1-5) on the Likert scale. Patients with 0 pad usage were significantly more satisfied than those who continued to require pads (4.2 vs. 1.7; $p=0.001$).

Conclusions: Autologous suburethral sling using vaginal wall tissue can be an effective and well tolerated technique in patients with SUI. In our cohort, patients were satisfied with the procedure, with 91% reporting no pad or minor pad use postoperatively.

Sources of Funding: None

HOLMIUM LASER ENUCLEATION OF THE PROSTATE AS RETREATMENT AFTER UROLIFT DEVICE: FEASIBILITY AND TECHNICAL CONSIDERATIONS

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(Presentation will be made by Dr. Sean McAdams)

Objectives: In this video we demonstrate the feasibility of Holmium laser enucleation of the prostate (HoLEP) for retreatment of persistent lower urinary tract symptoms (LUTS) after previous treatment with the UroLift device. Technical considerations with regards to both enucleation and morcellation of resected tissue are discussed. Benign prostatic hyperplasia (BPH) affects millions of men worldwide. The UroLift system (NeoTract Inc., Pleasanton, CA) was recently introduced as a means to perform prostatic urethral lift (PUL) procedure for lateral lobe hypertrophy in patients with obstructive voiding symptoms. UroLift has been associated with a retreatment rate of 7% at 2 years and 14% at 4 years. Retreatment with TURP, photovaporization of the prostate and repeat UroLift has been described without notable issue, but retreatment with HoLEP has not yet been described.

Methods: We included two patients who had undergone PUL with UroLift system at outside institutions and presented with recurrent LUTS. Patients were evaluated by cystoscopy, uroflowmetry, transrectal ultrasound of the prostate, and urodynamics to define the etiology of their urinary symptoms and determine appropriate therapy. HoLEP was performed under general anesthesia as previously described. Morcellation of the resected adenoma was performed with the VersaCut reciprocating morcellator (Lumenis Inc, Santa Clara, CA).

Results: Enucleation was successfully completed in both patients. Monofilament sutures of the UroLift device were easily visualized and transected with the holmium laser. At the bladder neck, both patients were unexpectedly found to have the outer nitinol tab portions of UroLift devices located within the capsule of the prostate, rather than in the intended extracapsular location. Auxiliary maneuvers were required for removal of these nitinol tabs. The inner stainless steel portions of the UroLift device were encountered during morcellation of the resected adenoma. In each instance, the metal tabs became lodged in the reciprocating blades of the morcellator, requiring withdrawal of the morcellator instrument and manual removal of the tab from the morcellator blade. This resulted in brief disruptions in the procedure. There were no operative complications.

Conclusions: To our knowledge, we present the first description of HoLEP with morcellation of adenoma tissue after previous prostatic urethral lift surgery with the UroLift device. HoLEP can be performed safely and effectively post UroLift, however morcellation of the adenoma tissue is complicated by the metallic implants of the UroLift device.

Source of Funding: None

FROM BIPOLAR RESECTION, TO BIPOLAR ENUCLEATION- THE BENEFITS OF ENUCLEATION WITHOUT THE STEEP LEARNING CURVE

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Introduction: The benefits of prostate enucleation have been well described, and some state that prostatic enucleation is the new gold standard for the management of enlarged prostate. The reasons behind this revolve around the complete removal of adenoma resulting in more durable long-term outcomes, superior outcomes compared to traditional resection, and potentially limitless size requirements given the nature of the approach. While the enucleation may be a more thorough operation, the steep learning curve with laser enucleation and extra equipment required in the morcellator, have limited the dissemination of the approach.

Methods: This video illustrates a step-wise process of learning enucleation with traditional resectascope equipment.

Results: Enucleation with traditional bipolar resectoascope equipement offers several advantages over laser. First, all urologists are comfortable with the resectascope. Second, with the working element there is better perspective allowing better visualization during the learning phase, that is not possible with the close contact lasers. Third, if at any time one feels “lost” they can convert to a traditional resection without difficulty. Finally, there is no special equipment required.

Conclusion: Transurethral bipolar enucleation is an easy way for urologists to learn the enucleation process, with equipment they already have.

DIAGNOSTIC CHALLENGES AND SURGICAL MANAGEMENT OF PERSISTENT MÜLLERIAN DUCT REMNANTS: A VIDEO PRESENTATION OF ROBOTIC SURGICAL EXCISION

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(Presentation to be made by Dr. Stephanie Chu)

Introduction: Persistent müllerian duct syndrome (PMDS) is a rare disorder of phenotypically normal 46XY males with normal external male genitalia, but with internal müllerian structures. The condition is thought to arise from either decreased levels of Müllerian inhibiting substance (MIS), a receptor defect resulting in lack of an appropriate response to MIS, or a defect in the timing of MIS release. There are approximately 200 reported cases of PMDS in the past 50 years, with the majority discovered during the workup of hypospadias or cryptorchidism. Despite the strong association between other manifestations of disorders of sexual differentiation and PMDS, and workup specifically looking for PMDS, ultrasonograophy is often insufficient at identifying müllerian remnants, and more invasive diagnostic tools such as voiding cystourethrography, magnetic resonance imaging, cystoscopy, and laparoscopy are often necessary.

There was previous controversy regarding the need to excise the müllerian remnants, however there have been several cases of malignant degeneration of the remnants recently, with a few progressing to metastasis and eventual death, thus most authors now argue for excision. This has been performed in an open fashion using a number of different approaches, however a laparoscopic approach was developed in 1994 due to the difficulty of open visualization and dissection. The operative goal is to remove as much of the remnant as possible, however most authors suggest leaving a portion in situ to avoid damaging the vasa, deferential arteries, ureters, and posterior urethra. Our objective is to describe our experience with robotic surgical excision of müllerian remnants in a video format, as there have been very few reported cases in the literature.

Methods (video case report): A 20 year-old male presented with one year of intermittent, severe lower abdominal pain, as well as chronic constipation. He had a history of proximal hypospadias which required 3 surgeries to correct, as well as bilaterally small malformed undescended testes, which were removed. At the time of orchiectomy, a diagnostic laparoscopy was performed which revealed no female structures. A karyotype identified him as a genetically normal 46XY male. Aside from initiating replacement testosterone at age 12, his adolescent history was unremarkable. Abdominal ultrasound revealed a fluid-filled tubular structure behind the bladder, thought possibly to be bowel. MRI showed a 15x8cm fluid filled structure posterior to the bladder.
Description of video:

- *Cystoscopy was performed first, which revealed hair follicles at the previous hypospadias repair site, and no evidence of any outpouching of the posterior urethra that might be a connection with the müllerian duct remnant*
- *The robot was docked in an identical configuration as for a robotic prostatectomy, with 5 ports, with the patient in supine, split-leg, lithotomy position*
- *The cystic structure was immediately visualized*
- *The structure was carefully dissected off of the rectum posteriorly, bladder anteriorly, and ureters bilaterally*
- *The dissection was carried down caudally to the posterior urethra and the structure amputated, with efflux of a large amount of viscous purulent material from the lumen*
- *The lumen of the stump was inspected, with no evidence of communication with the urethra, thus it was left open*
- *The abdomen was irrigated, and hemostasis achieved with electrocautery and floseal*
- *The structure was placed in an endocatch bag and removed*

Results: The patient did well postoperatively, with resolution of his abdominal pain. Ultrasound identified a small fluid collection posterior to the bladder 1 week postoperatively, which was decreased in size at 3 months postoperatively.

Conclusions: Persistent müllerian remnants are often difficult to identify with traditional imaging modalities, and require vigilant and long-term followup to maximize detection. Surgical removal is often difficult due to the location of the remnants and their proximity to surrounding structures. Open and laparoscopic approaches have been successfully utilized, however robotic excision is a novel method that may allow for improved visualization and operative precision.

PERCUTANEOUS EXTERNALLY ASSEMBLED LAPAROSCOPIC (PEAL) SURGERY FOR FOWLER-STEPHENS ORCHIOPEXY: A VIDEO PRESENTATION

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(To be presented by Dr. Samuel Abourbih)

Introduction: Laparoscopy is the gold standard for diagnosis and treatment of boys with non-palpable testicles. In an effort to reduce the invasiveness of laparoscopic orchiopexy, various strategies have been employed including use of laparoendoscopic single site surgery (LESS) and needlescopic surgery. Needlescopic instruments have limited functionality due to their small size and are more prone to intrabdominal organ injury. LESS has been criticized when used in children due to the requirement of a much larger 3 cm incision. In this video we will demonstrate the feasibility of a novel percutaneous externally assembled laparoscopic (PEAL) surgery paradigm for orchiopexy which is designed to reduce the invasiveness of the procedure while maintaining instrument triangulation.

Methods: The PEAL surgical paradigm is composed of a reusable handpiece and a disposable 2.96 mm instrument shaft and interchangeable disposable 5 mm instrument tips. This video will demonstrate how the PEAL instruments are externally assembled and brought back into the abdomen without a trocar to perform the surgery. Due to their small size and because they are assembled externally, they produce an essentially scarless outcome. This video will demonstrate the PEAL surgical paradigm for the performance of Fowler-Stephens orchiopexy.

Results: Using this innovative new paradigm, a 9 month-old infant underwent first stage and a 9 year-old child underwent second stage successful bilateral Fowler-Stephens orchiopexies. Operative times were 65 minutes for the first stage and 180 minutes for the second stage. Blood loss was minimal in both cases. Both patients were discharged the day of surgery with no complications. At follow up, the objective cosmetic results were excellent and the second patient's testis was palpable in the scrotum and well-positioned.

Conclusions: Due to its improved cosmesis and ease of performance, the PEAL surgical paradigm shows promise in reducing the invasiveness of pediatric Fowler-Stephens orchiopexy. In addition it shows promise with a wide variety of minimally invasive surgical applications.

Source of Funding: None

OUR INITIAL EXPERIENCE WITH SINGLE SITE ROBOTIC SURGERY IN UROLOGY: TRAINING PATHWAY AND CASE PRESENTATION OF A URACHAL CYST EXCISION

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(Presentation to be made by Dr. Alexander Ernest)

Introduction: We sought to evaluate the feasibility and safety of single site robotic surgery for use in urologic surgery. Urologic single site robotic surgery is not approved by the Federal Drug Administration (FDA) but is approved for use in both general surgery and gynecology (GYN). There is no prescribed training pathway by Intuitive Surgical for DaVinci single site robotic surgery for urologic surgeons.

Methods: The staff urologist underwent dry lab and wet lab training at an Intuitive Surgery DaVinci training center along side a training staff GYN. All dry and wet lab GYN single site robotic surgery training modules were successfully completed. We evaluated our patient population and identified a 22-year-old active-duty male soldier who presented with an incidentally discovered urachal cyst following a work up for chronic midline abdominal pain. The patient developed chronic peri-umbilical pain following a ventral hernia repair with mesh. The patient was counseled for observation of the urachal cyst but opted for surgical excision via single site robotic surgery. We disclosed the lack of FDA approval and informed the patient of our initial experience with reassurance that the procedure could be converted to a standard multi-port robotic surgery if needed. The involved surgical residents, operating room technicians, and nurses completed on-line training and a dry lab training before participation in the surgery. A GYN staff and resident surgeon experienced with single site robotic surgery were present in an advisory role during port placement and docking of the robot.

Results: We opted for port placement off the midline away from the hernia repair, site of pain, and presumed scar tissue via 2.5 cm incision at the left lateral border of the rectus muscle at the level of the umbilicus. The short curved single site robotic trocars and instruments were placed under direct vision. The robot was docked. The urachus was completely excised from the abdominal wall and dissected off the bladder as aided by filling the bladder with saline. The bladder was not entered given the low malignant potential, absence of cyst contact with the bladder wall on imaging, and absence of urinary tract signs or symptoms. Total robotic surgery time was approximately 30 minutes. Estimated blood loss was less than ten millimeters. The patient was discharged that same day and had an unremarkable recovery. The cyst proved benign and was associated with mucinous glands. The patient continued to have peri-umbilical pain 6 months after surgery unchanged from his original chronic pain, but reported no pain or symptoms from the single site surgery. He has continued to follow up with general surgery for his chronic pain.

Conclusion: We present a feasible training pathway to safe use of single site robotic surgery in urology with appropriate patient counseling and patient selection.

Source of Funding: Department of Defense

EX-VIVO URETEROSCOPY FOR RENAL STONE REMOVAL IN A LIVING DONOR: A VIDEO PRESENTATION

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(Presentation to be given by Dr. Kelly)

Introduction and Objective: In the United States, over 120,000 patients are waiting to receive a kidney transplant and more than 6500 die every year prior to receiving one. Many centers will allow patients with a single prior stone episode to donate a kidney. Donors who present with stones may undergo surgery prior to donation to remove the stone or the kidney may be transplanted with the stone in place. This video will demonstrate an ex-vivo removal of a 4 mm stone from a donated kidney.

Methods: During evaluation of a 52-year-old donor a 4 mm lower pole stone was identified in the left kidney. The patient's 24 hour urine evaluation revealed no significant metabolic abnormality with an isolated low urine volume of 1.07 liters. A nuclear renogram demonstrated left kidney function of 48% and a decision was made to remove the left kidney. The kidney was removed using a hand-assisted laparoscopic technique and placed in iced saline and perfused with University of Wisconsin solution. In preparation for ureteroscopy, two 5-0 PDS sutures were placed into the ureter to assist in manipulation. A 0.038 inch angle-tipped hydrophilic wire was passed into the kidney under direct external vision. Using a 6 French endhole catheter, the hydrophilic wire was converted to a 0.038 inch standard PTFE coated guidewire. A flexible ureteroscope was advanced into the renal pelvis under direct external visualization. Renal mapping was performed and the solitary 4 mm stone in the lower pole was basketed and removed intact.

Results: This video describes the successful use of ex-vivo ureteroscopy in a living donor to remove a lower pole stone. The total operative time during ureteroscopy was 14 minutes. Chemical analysis of the removed stone demonstrated 100% calcium oxalate monohydrate and the donor was advised to dramatically increase his fluid intake to decrease his risk of future stone formation. The donor and recipient were both discharged on post-operative day 3 with no complications. The recipient's nadir creatinine was 1.0 mg/dl and is doing well 10 months later with no complications.

Conclusions: In this donor with a single 4 mm lower pole renal stone, the use of flexible ex-vivo ureteroscopy allowed his recipient to receive the lifesaving organ transplant without risk for stone passage or obstruction. This technique is easily performed and may reduce the risk from additional surgeries preoperatively for the donor and avoid the risk of leaving the stone in situ for the recipient. This technique should be considered in any donor presenting with a solitary stone.

Source of Funding: None

USE OF ENDOSCOPIC BASKETS AS FULGURATION DEVICES DURING URETEROSCOPIC PROCEDURES

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(Presentation to be made by Dr. Jabaji)

Introduction and Objective: We describe a novel technique of ureteroscopic fulguration that may be used in the setting of upper tract urothelial carcinoma. Endoscopic management has been shown to have similar disease-free survival rates when compared to radical nephroureterectomy in those with low-grade disease, and plays an even larger role for very elderly patients or those unfit for aggressive treatment. The most common modality for ureteroscopic fulguration is the holmium laser. However, holmium lasers have poor tissue penetrance and minimal coagulative ability. Monopolar disposable devices, on the other hand, are typically large and may occlude irrigation and/or not be accommodated by the small ports of the flexible ureteroscope. Furthermore, these may be associated with increased operative time while switching instruments, and increased cost of opening additional instruments.

Methods: We highlight the case of an 87 year old female with distal ureteral urothelial carcinoma. We present the use of monopolar diathermy in combination with the Cook Medical N-gage basket as a fulguration device.

Results: The patient must be grounded to employ this technique. Monopolar diathermy can be applied on coag setting to the exposed metallic portion of the Cook Medical N-gage endoscopic basket located near the handle that open and closes the instrument, while carefully letting the basket make contact with the tissue intra-luminally. Once the bleeding is controlled and visualization improves, one can immediately return to snaring tumor with the same basket, without switching instruments. In our experience, it is safe to use coag settings of up to 30 watts. Because the only exposed metallic portions of the basket device are the tip and the portion near the handle where the Bovie is applied, the sheath allows energy from the electrocautery to be applied to bleeders without damage to ureteral tissue in contact with the sheath itself. This technique can also be applied in patients with tumors of the renal pelvis. We have treated several patients with low-grade disease who remain disease-free on imaging and repeat endoscopy years after their initial endoscopic treatment.

Conclusions: We present our novel monopolar electrocautery using endoscopic basket as a minimally invasive option for a more definitive ablative and fulguration modality than the current standard of holmium laser. We believe this modality is safe, effective, and in our experience has demonstrated long term success.

ULTRASOUND FOR INTRAOPERATIVE CONFIRMATION OF ANTEGRADE URETERAL STENT PLACEMENT DURING LAPAROSCOPIC PYELOPLASTY

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(Presentation to be made by Dr. David B. Bayne)

Introduction: Typically, a ureteral stent is placed at the time of ureteral reconstruction to facilitate postoperative healing. Stent placement represents a particularly challenging step of the case. Surgeons use a number of retrograde, antegrade, endoscopic, and fluoroscopy-guided techniques to accomplish this part of the procedure, but many of them require cumbersome repositioning or equipment and are associated with a significant investment of time. The aim of this study is to report a novel approach for confirmation of ureteral stent position in the bladder during laparoscopic pyeloplasty with antegrade ureteral stent placement in an adult patient.

Methods: A 50-year-old male presented with chronic intermittent right-sided flank pain. His past history is notable for a right proximal ureteral stone treated with ureteroscopy and laser lithotripsy at an outside facility 4 years prior to this presentation. CT scan revealed right proximal ureteral stricture with a markedly dilated renal pelvis consistent with an acquired ureteropelvic junction obstruction. Subsequent lasix renogram showed salvageable renal function. The patient was counseled on his treatment options and ultimately opted for laparoscopic ureteral reconstruction.

A 3-way 20 french foley catheter was placed after induction with general anesthesia. Laparoscopic dismembered pyeloplasty was performed via a transperitoneal approach. Intraoperatively, the bladder was filled retrograde with 300 cc of normal saline through the foley catheter. After completion of the posterior suture line of the ureteral anastamosis, a 4.8 french, 26 cm length ureteral stent was placed in an antegrade fashion down the ureter using a 5 French exchange catheter and a guidewire. The stent was passed over the guidewire first distally down the ureter and into the bladder. The proximal curl was then tucked into the renal pelvis using a Davis & Geck and the remainder of the ureteral anastamosis was completed. Without patient repositioning, an intraoperative ultrasound machine (Hitachi Aloka Alpha 7, Hitachi Aloka Medical America, Inc., CT) with a 3.5 mHz abdominal transducer was utilized to identify the distal stent curl within the bladder lumen.

Results: The ureteral stent was readily visualized in the bladder as parallel echogenic lines. A postoperative plain film KUB was performed in the post anesthesia care unit to confirm proper proximal and distal ureteral stent placement.

Conclusions: Here we demonstrate successful use of intraoperative ultrasound to confirm appropriate distal stent positioning in the bladder of an adult patient following antegrade stent placement for laparoscopic dismembered pyeloplasty. This proof of concept demonstrates that antegrade stent placement into the bladder can be confirmed using ultrasound in adult, laparoscoic ureteral surgery.

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