

## LAPAROSCOPIC TRANSMESOCOLIC PYELOLITHOTOMY

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**Introduction & Objectives:** We describe the case of a 53 years old man presenting with a 2,5 cm stone in the left renal pelvis and a 1 cm stone in the inferior calyx. The patient required the treatment of the stones in a single procedure.

**Material & Methods:** After induction of the pneumoperitoneum with a Veress needle one 12 mm optical trocar and three other 5 mm trocars were inserted. In this case the descending colon was very adherent to the abdominal wall. Therefore a transmesocolic access to the left renal pelvis was preferred. The renal pelvis was isolated from the surrounding fat tissue taking attention to spare the colonic vessels. The renal pelvis was opened and the large stone removed. A flexible cystoscope was inserted into the renal pelvis through a 12 mm trocar to explore the renal calyces. The 1 cm stone in the inferior calyx was then removed with a basket. The stones were finally removed in an endobag. A double J ureteral stent was placed before closing the renal pelvis in an interrupted fashion.

**Results:** A retrograde cystography in post operative day 5 showed left vesico-ureteral reflux without leakage of contrast medium. The patient was discharged stone free in post operative day 5 and the ureteral stent was removed 20 days after the procedure.

**Conclusions:** Laparoscopic pyelolithotomy is a procedure to be considered in case of complex or multiple large renal stones. This technique is minimally invasive and allows a complete treatment of the stones in a single procedure.

## ROBOTICALLY ASSISTED LAPAROSCOPIC PYELOPLASTY-UTILITY OF THE 4TH ARM (THE PURE NON TOUCH TECHNIQUE)

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**Introduction & Objectives:** PUJ obstruction can be treated via a variety of methods: several series of Robotic assisted Lap. Pyeloplasty (RALP) have been published and tend to replicate the conventional laparoscopic technique i.e. laparoscopic dismembered pyeloplasty, the forth arm however remained underutilised. To assess the use and success of the daVinci Robotics in dismembered pyeloplasty with the advantages of the 4<sup>th</sup> arm in Robotic assisted laparoscopic Pyeloplasty at a single institution.

**Material & Methods:** Data were prospectively collected from October 2006 to July 2008, all robotic assisted laparoscopic pyeloplasties were logged. (n=10) the forth arm was used in all cases. All had DTPA proven PUJ obstruction; all had a multi-slice CT with vascular reconstruction to identify crossing vessels intra-operative Double J stenting and on table retrograde pyelogram.

**Results:** Ten RALP treatments were performed; all 10 patients underwent a successful procedure without open conversion or transfusion. (EBL=50 ml) One patient required a laparoscopic omental lysis on day 4 to release omentum caught by drain. A pre-existing Double J Stent (n=3) was changed via cystoscopy prior to surgery. Mean suturing time was 49 minutes and mean console time was 130 min. All patients had minimal analgesia requirement postoperatively and a JJ stent removed 6 weeks later. A follow up IVP and DTPA was done in 3 months, 3 were followed with renal US selectively on annual basis. The 4<sup>th</sup> arm acted as a reliable counter-traction arm on the colon while mobilizing the latter, a non touch technique was employed. The forth arm also assisted in several other aspects that will be shown on DVD in the meeting with the results. The setting will be explained.

**Conclusions:** The 4<sup>th</sup> arm can be used effectively in RALP, the increased degrees of freedom using Endowrist<sup>®</sup> technology facilitated intracorporeal suturing, while the 4<sup>th</sup> arm was a clear advantage adding to the excellent exposure and success.

## SUPINE PERCUTANEOUS NEPHROLITHOTRIPSY (PCNL) IN CHILDREN: TECHNICAL ASPECTS

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**Introduction & Objectives:** The paediatric percutaneous nephrolithotripsy is not a frequently procedure due to low incidence of stone disease in this age but the endourological resolution is anyway to consider as the first choice for a less invasive approach; these patients are exposed to an high incidence of lithiasic recurrences and surgical treatments too.

**Material & Methods:** We presented a 4-yrs old girl with a left 3 cm burden pellic stone with a 7mm fragment in the lower calyx. Our technique consist in a supine percutaneous position that allows the contemporaneous use of flexible urethroscope (positioning as first step) for the selection of the correct calyx for percutaneous puncture (Endovision<sup>®</sup> procedure). The direct control of needle's perforation of renal papilla confirms or excludes the first biplanar x-ray guidance and confirms the correct site of penetration reducing the risk of haemorrhagic complication. The nephrostomy dilation was performed with a 14 Fr MINI-percutaneous set with hydrophilic teflonate coaxial dilators. We used LASER lithotripsy and grasping/basket removers. We left a 12 Fr nephrostomy catheter and a 4,8 Fr mono-J ureteral stent.

**Results:** The children was stone free; the nephrostomy tube was removed after 2 days and the mono-J after 24 hours. X-ray exposure was 1' 35". No bleeding or infection complications occurred.

**Conclusions:** In adults as in the children, the supine position presents different advantages: optimal decubitus can be assumed by the awake patient by himself, no risk of traumatism due to bed-position (standard prone procedure); no thoracic compression occurs, colon perforation risk is reduced; contemporary dominion of urinary tract, retrograde ureteroscopic and anterograde percutaneous with rigid and flexible instruments, makes clearance of stone fragments easier, even in particularly difficult cases. During LASER lithotripsy, the irrigation through ureteral way allows the coming out of stone fragments for gravity and maintains low intrarenal pressures during surgical time. We believed that supine percutaneous technique in paediatric age is a safe, effective and feasible procedure.

## DORSAL TRANSVERSE MINI-LUMBOTOMY INCISION AS A MINIMALLY INVASIVE APPROACH FOR PYELOPLASTY IN CHILDREN

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**Introduction & Objectives:** Open pyeloplasty is the standard of care in the surgical management of ureteropelvic junction obstruction (UPO). Laparoscopic and endoscopic techniques have been popularized in terms of high success rates and decreased morbidity, yet, these skills and facilities may not be available to all pediatric urologists. We evaluated pyeloplasty with dorsal mini-lumbotomy incision as a minimally-invasive treatment option for UPO.

**Material & Methods:** Fifty-nine children (42 male, 17 female, age: 3 months-17 years) underwent pyeloplasty with dorsal mini-lumbotomy incision between 1990 and 2008. Six had kidney stones and 3 had solitary kidney. A 4-5 cm. incision was made semi-parallel to the sacrospinal muscle starting from the inferior border of the 12<sup>th</sup> rib running in a lateral direction. Latissimus dorsi fibers were split and lumbodorsal fascia was exposed through muscle-splitting blunt dissection. After entering the lumbodorsal fascia and underlying Gerota's fascia, the ureter was identified, followed by complete dissection and mobilization of the ureteropelvic junction. 3/0 stay sutures were placed just distal to the UPO as well as medial and lateral aspects of the dilated renal pelvis to facilitate a secure resection. Wide excision of the renal pelvis was then performed which included the adynamic segment. A wide-spatulated anastomosis was performed using 3/4-0 polyglactin suture that passed through the mucosa at 2 stay sutures only (ie. the apex and base of the spatulated ureter), followed by water-tight seromuscular closure sutures which ran between the 2 stay sutures on each side. A 4 Fr intraureteral transanastomotic stent was placed from the pelvis through the renal parenchyma and skin in all cases which enabled free urine passage from the pelvis to the ureter. Forty nine children received dismembered pyeloplasty. Modified Y-V plasty was performed in 10 children with distal ureteral extension of the long arm of "Y", which translated the adynamic segment into renal pelvis. All children were discharged within 48 hours. Stents were removed at 2-3 weeks. Children were evaluated with urinalysis and ultrasonography at 1<sup>st</sup> month, and diuretic renogram or intravenous urography at 6<sup>th</sup> month, and yearly thereafter.

**Results:** Operative time ranged between 45 to 95 minutes. Intrinsic narrowing and extrinsic obstruction was diagnosed in 81 and 19 percent of children, respectively. In all cases, paracetamol was sufficient to alleviate pain. Secondary intervention was not required in any case with a mean follow-up of 56 months (range: 6-132).

**Conclusions:** Pyeloplasty with dorsal mini-lumbotomy may be an alternative to endoscopic/laparoscopic procedures. A disadvantage is the incision scar which is perpendicular to skin lines. However, the use of transverse skin incision may result in improved cosmesis.