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## Mini-laparoscopic dismembered pyeloplasty using only 3 mm instruments (3 mmML)

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## Introduction

The first laparoscopic (LA) dismembered pyeloplasty presented in 1993 years, William Schuessler and Louis Kavoussi. Since then surgery has evolved over the years. Currently, most treatments are performed by transperitoneal access using the Anderson-Hynes technique. In 1997, a minilaparoscopy (ML) with 3- and 2-mm instruments was introduced having good cosmetic and post-operative pain results and maintaining the same functional results as LA. In 2012, the results of pyeloplasty with the novel retroperitoneal mini-laparoscopic approach: the small-incision access retroperitoneoscopic technique (SMART) was published.

Since 1998 in our institution we have been performing laparoscopic (LA) dismembered pyeloplasty and in 2011 we implemented for the first time a pyeloplasty procedure with ML and V-lock stitches. In our video we are shown performing laparoscopic dismembered pyeloplasty in own modification using the V-Loc stitch and only the mini-laparoscopic 3 mm instruments, including 3 mm optic.

## Material and methods

A 26 year old male with a ureteropelvic junction (UPJ) obstruction was confirmed for laparoscopic (transperitoneal) dismembered pyeloplasty. Operations were performed with three trocars 3.5 mm diameter including the 3 mm optic – 3 mmML. We used the Storz Company 3 mm instruments including: scissors, the monopolar dissector, bipolar forceps, grasper, sucker and needle holder. Stages of the procedure: 1<sup>st</sup> Visualization of the retroperitoneal space. 2<sup>nd</sup> Dissected UPJ. 3<sup>rd</sup> Incision of pelvis and posterior wall of the ureter. 4<sup>th</sup> Introduction to the retroperitoneal space needle. 5<sup>th</sup> Introduction to the ureteral catheter and the establishment of the first connecting suture. 6<sup>th</sup> Suturing the posterior wall. 7<sup>th</sup> Cutting the pelvis end of the UPJ. 5<sup>th</sup> The introduction of D-J catheter. 6<sup>th</sup> Suturing the anterior wall.

## Results

The total operative time was 2 hours and it was no longer than any other laparoscopic UPJ pyelo-

plasty performed at our department. All stages of standard laparoscopy were mapped in the 3 mmML, including the introduction of trough 3 mm ports, the needle and a double “J” stent. The anastomosis of the ureter and pelvis using a 17 mm needle with V-Loc 3-0 sutures was done tightly without any tension. On the third day, the bladder catheter and drain was removed, respectively, and the patient was discharged from the hospital. There were no intraoperative or short term complications. Patients evaluation at the 3 and 6 month post-operative period revealed good radiographic and symptomatic results.

## Conclusions

Minilaparoscopy using only 3 mm instruments is an ideal option for the dismembered pyeloplasty, especially for those patients with high cosmetic expectations. New 3 mm instruments are of appropriate elasticity and are sufficient to carry out all of the steps in the procedures, including the introduction of the needle and sewing. Further studies should be performed to assess the long term results of the 3 mmML dismembered pyeloplasty.