International Braz J Urol Vol. 35 (1): 90-94, January - February, 2009

# Re: Appendiceal Substitution Following Right Proximal Ureter Injury

To the Editor,

Use of the appendix as a ureteral substitute was first described by Melnikoff in 1912 (1). However, the technique has been used only in a handful of patients since its introduction (2,3). We present the case of a 66 year-old male who presented with abdominal pain three weeks after undergoing lysis of small bowel adhesions, and was found to have an 8-10 cm defect of the right proximal ureter upon undergoing retrograde pyelogram.

There are numerous techniques for the repair of ureteral injuries. Primary end-to-end anastomosis, psoas hitch ureteral reimplantation, and Boari flap were not feasible in this case due to the length and location of the injury. Ileal interposition has been successfully used to repair large defects, but requires a bowel anastomosis, which we wished to avoid. Auto-transplantation of the kidney is technically challenging and associated with unique morbidities. Appendiceal substitution was chosen due to the amenable location of the injury and favorable operative risks.

In the operating room, we injected methylene blue through a previously placed nephrostomy tube in order to better delineate the proximal margin of the injury. The appendix was then ligated at its base and tip and detached from the cecum. Special attention was given to preserving the appendicular arteries and mesoappendix (Figure-1). The appendix was cannulated to accommodate a 14 French endopyelotomy stent. Next, the appendix was rotated up to the level of the renal pelvis to ensure a tension free anastomosis. It was then oriented in isoperistaltic fashion with its distal tip abutting the renal pelvis. A spatulated uretero-appendiceal anastomosis was performed on both ends of the graft (Figure-2). The anastomosis was then tested

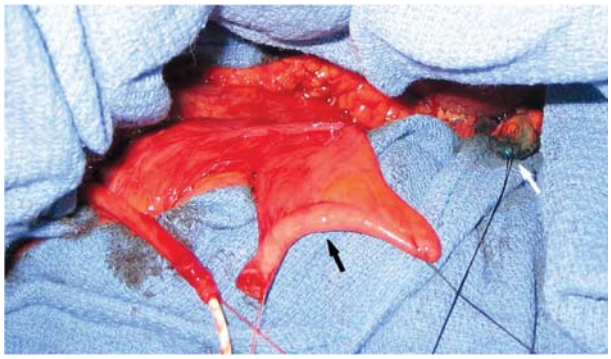

***Figure 1 –*** *Proximal ureteral defect measuring 8-10 cm with appendix rotated into position (black arrow). Dark suture at right renal pelvis (white arrow).*

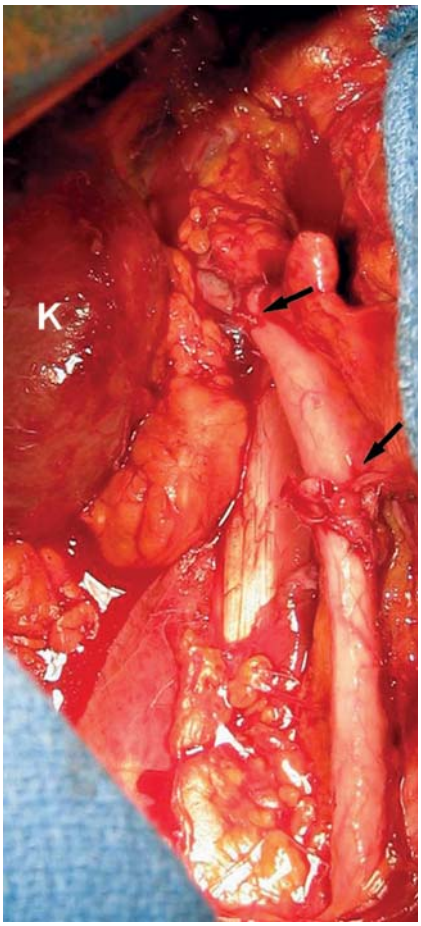


***Figure 2 –*** *Completed appendiceal interposition (arrows). K = right kidney.*

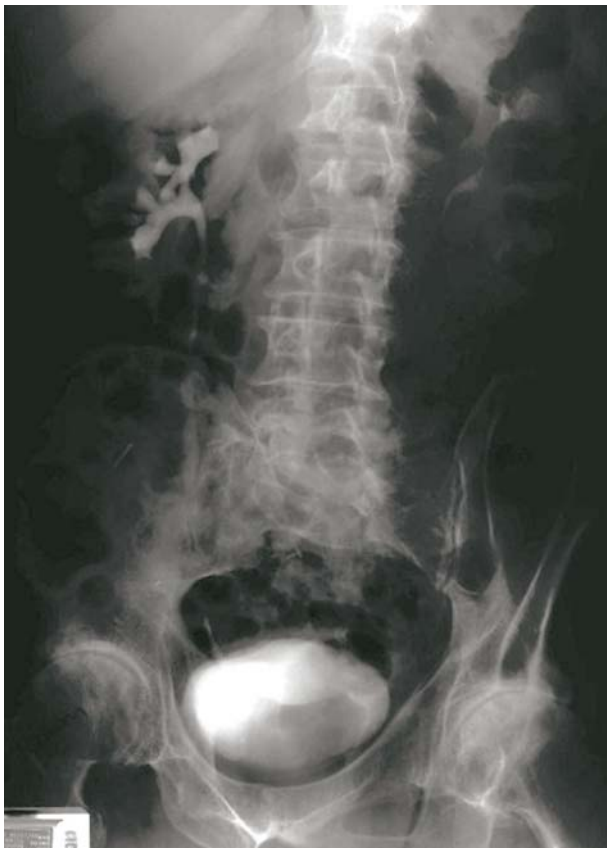

***Figure 3 –*** *Intravenous pyelogram at eight months postoperatively showing a patent graft with no evidence of stricture or hydronephrosis.*

for leakage by injecting methylene blue through the indwelling nephrostomy tube.

The patient was discharged from the hospital on postoperative day six and the stents were removed four weeks later. Intravenous pyelogram at eight months postoperatively showed a patent appendiceal graft with no evidence of stricture or hydronephrosis (Figure-3).

Long-term data in the small body of literature devoted to this procedure demonstrates excellent autograft performance and preserved renal function up to fifteen years postoperatively (2). While traumatic injury is the most commonly reported indication for this procedure, it has also been employed successfully in other settings such as ureteral necrosis secondary to dermatomyositis. This technique has also been proven effective in pediatric as well as adult populations (2).

The majority of case reports of appendiceal interposition involve the right ureter due to the ipsilateral location of the appendix. However, there is at least one description of a proximal left ureteral repair by Zargar et al. 2004 (3). To accomplish the left-sided reconstruction the author mobilized the appendix with the right colon and distal ileum into the left ureteral fossa.

This case supports appendiceal substitution as a reasonable option for patients with right-sided ureteral defects not amenable to primary end-to-end anastomosis. Limiting factors for the procedure include presence and length of appendix, impaired renal function, and history of pelvic irradiation.

**REFERENCES**


1. Melnikoff AE: Sur le replacement de l'uretere par anse isolée de l'intestin grêle. Rev Clin Urol. 1912; 1: 601-05.
2. Richter F, Stock JA, Hanna MK: The appendix as right ureteral substitute in children. J Urol. 2000; 163: 1908-12.
3. Zargar MA, Mirzazadeh M, Zargar K: The appendix, an acceptable substitute for all segments of both ureters: a report of two cases. Med J Islam Repub Iran. 2004; 18: 177-180.



***Matt S. Ashley, BA &***
***Dr. Siamak Daneshmand***
*Division of Urology & Renal Transplantation*
*Oregon Health & Science University*
*Portland, Oregon, USA*
*E-mail: daneshma@ohsu.edu*

# Re: Initial Complete Laparoendoscopic Single-Site Surgery Robotic Assisted Radical Prostatectomy(LESS-RARP)

To the Editor,

Laparoendoscopic single-site surgery (NOTES-LESS) has been gaining momentum in minimally access urological surgery. The incorporation of the robotic interface into the NOTES-LESS arena, proposes a symbiosis with promising future; Haber et al. (1), presented their experience with experimental with NOTES and robot in pigs for nephrectomies and pyeloplasties. Their results were encouraging in terms of feasibility. More recently, Desai et al. (2) presented an interesting work of transvesical radical prostatectomy (RP) in a cadaver model. Our group has previously report on a transitional experience to LESS-RP including both cadaver experimental and clinical experiences (3).

Previous detailed explanation and consent of the procedure, we have performed LESS-RARP in a 69 years old patient with prostatic cancer T1c. Patient's PSA and Gleason score were 8.50 ng/mL and 3+3, respectively. Patient was fully continent preoperatively and reported active sexual life. Operation was performed with daVinci® interface and standard trocars (Figure-1). Ports were placed in a rhomboid fashion with the endoscope in the upper corner (12 mm), a 5 mm trocar in the lower corner for suction and traction purposes and 8 mm working ports at either side, without need of any other instrument. Clashing between instruments was verified externally and this hardened assistant's performance. Total operative time was 210 min. Dorsal venous control was accomplished in 3 min. with one figure of eight stitch. Urethrovesical anastomosis was performed in 35 min. by separate stitches. An antegrade interfascial bilateral neurovascular bundle dissection was performed. Bipolar energy and metallic clips were used for hemostasis. Blood loss was 300 cc and final pathology reported a surgical specimen of 66 g, Gleason score 3+4 with negative surgical margins. No perioperative complications were observed.

RP has been previously assessed in NOTES-LESS urological surgery. Desai et al. (2) presented an interesting work of transvesical RP in a cadaver model. The procedure was performed in two fresh male cadavers. They employed four laparoscopic transvesical trocars and single-port device for their first and second cases, respectively, using the daVinci-S robot (Intuitive Surgical, Sunnyvale, CA, USA). Both operations were completed transvesically and robotically. There was no need for additional ports. Operative time for the multi-port procedure was 3 h and for the single-port procedure was 4.2 h. External conflict with robotic interface was experienced as a technical difficulty with the single-port procedure.

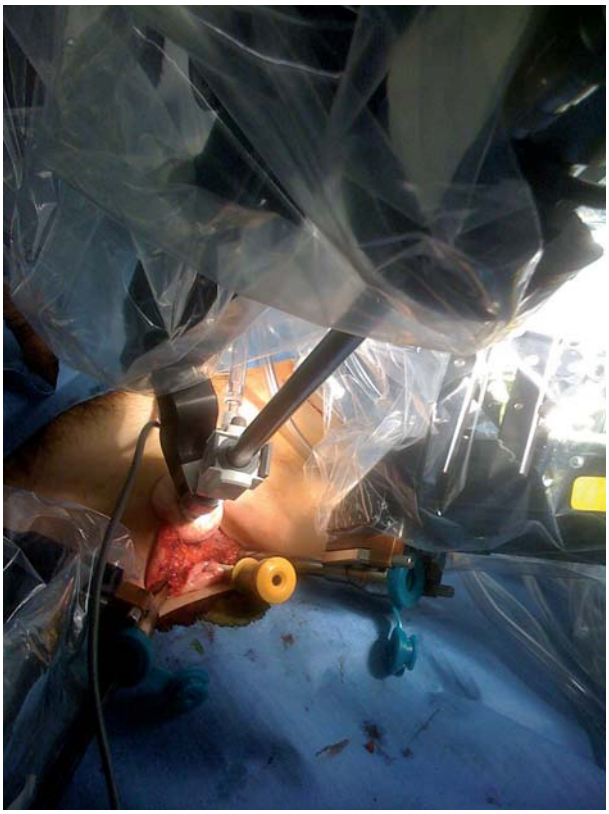

***Figure 1** – Rhomboid trocar positioning for LESS robotic assisted. Dissection of aponeurosis allowed a separation of 3.5 cm between ports.*

In the clinical arena, Kaouk et al. (4) presented a series of single-port laparoscopic RP in 4 patients diagnosed with prostate cancer. They treated patients with localized disease, no previous pelvic surgery, and a body mass index < 35 kg/m2. A single port device was placed transperitoneally through a 1.8-cm incision located at the umbilicus without any other instruments or ports needed to complete operations. Urethrovesical anastomosis was performed using free-hand interrupted suturing and extracorporeal knot tying. This work is an impressive publication verifying feasibility of this procedure with the use of single port and articulated instruments. Kaouk et al have also presented a previous experience in LESS-RARP using the R-port with adequate results.

We report to our the first clinical report of LESS-RARP. The procedure was successfully completed with the initial approach and a change in port triangulation was a key point to accomplish the task. Further evaluation of the technique is warranted.

**REFERENCES**


1. Haber GP, Crouzet S, Kamoi K, Berger A, Aron M, Goel R, et al.: Robotic NOTES (Natural Orifice Translumenal Endoscopic Surgery) in reconstructive urology: initial laboratory experience. Urology. 2008; 71: 996-1000.
2. Desai MM, Aron M, Berger A, Canes D, Stein R, Haber GP, et al.: Transvesical robotic radical prostatectomy. BJU Int. 2008; 102: 1666-9.
3. Barret E, Sanchez-Salas R, Kasraeian A, Benoist N, Ganatra A, Cathelineau X, et al.: A transition to laparoendoscopic single-site surgery (LESS) radical prostatectomy: human cadaver experimental and initial clinical experience. J Endourol. 2009; 2. [Epub ahead of print]
4. Kaouk JH, Goel RK, Haber GP, Crouzet S, Desai MM, Gill IS: Single-port laparoscopic radical prostatectomy. Urology. 2008; 72: 1190-3.
5. Kaouk JH, Goel R K, Haber GP, Crouzet S, Stein RJ. Robotic single-port transumbilical surgery in humans: initial report. BJU. 2008 Sep 3. Epub ahead of print.



***Dr. Eric Barret, Dr. Rafael Sanchez-Salas, Dr. Xavier Cathelineau, Dr. Francois Rozet, Dr. Marc Galiano & Dr. Guy Vallancien***

*Department of Urology*
*Institut Montsouris*
*Université Paris Descartes*
*Paris, France*
*E-mail: eric.barret@imm.fr*


## Re: The Influence of Statins on Prostate-Specific Antigen Levels

To the Editor,

The influence of statin medications on prostate specific antigen levels is somehow controversial. Recently, Hamilton RJ et al. analyzed data of men who were prescribed a statin for a long-term period. The authors reported a statistically significant decline in PSA levels in men without prostate cancer, after they were treated with statins (1). This finding is in accordance with that of Cyrus-David et al., who also reported an important PSA decline in a small number of healthy men treated with statins for over 5 years (2). In contrast, Mills et al., who assessed the efficacy of statins in the treatment of lower urinary tract symptoms and prostate enlargement in a large, double-blind, placebo-controlled trial did not found

any difference between the effects of statins and placebo on the mean change from baseline in PSA levels after 26 wk of treatment (3). In our recently published study investigating the effects of statins on conventional medical treatment of lower urinary tract symptoms with finasteride, serum PSA values seemed to be generally lower in statin/finasteride arm compared to finasteride arm alone at the end of the study (4). The fact that the change in mean PSA from baseline to end point in patients treated with statins did not achieved statistical significance lead authors to conclude that statins do not seem to boost the finasteride's effect on PSA. However, under the light of the new evidence emerged from the study of Hamilton RJ et al., this could be attributed to the relatively low sample as well as to the relatively low duration of the study and an effect of statins on PSA would be probably detected if the study has been lasted over a longer period of time. In fact, effects of statins on prostate biology, as observed in large prospective cohort studies, are probably associated with higher doses and longer use (5). Although the specific mechanism by which statins influence PSA is not understood, it could be assumed that involves metabolic pathways. Since cholesterol is an important precursor for androgen formation, it is conceivable that by influencing cholesterol metabolism, statins may lower levels of intraprostatic androgens and in consequence they reduce PSA levels. An additional, non-cholesterol mediated effect of statins via anti-atherosclerotic action is not to be excluded also. Effects of statins in both prostate stromal and epithelial cells have been attributed to the anti-oxidative properties of statins as well. Data suggesting that treatment with statins lower serum PSA with time may also indicate new possible drug mechanisms acting on prostate cells at the receptor level and may indicate a novel approach in both prostate cancer chemoprevention and benign prostate hyperplasia treatment. Therefore, further experimental studies are needed in order to investigate the exact mechanism by which statins impact on prostate cells.

**REFERENCES**


1. Hamilton RJ, Goldberg KC, Platz EA, Freedland SJ: The influence of statin medications on prostate-specific antigen levels. J Natl Cancer Inst. 2008; 100: 1511-8.
2. Cyrus-David MS, Weinberg A, Thompson T, Kadmon D: The effect of statins on serum prostate specific antigen levels in a cohort of airline pilots: a preliminary report. J Urol. 2005; 173: 1923-5.
3. Mills IW, Crossland A, Patel A, Ramonas H: Atorvastatin treatment for men with lower urinary tract symptoms and benign prostatic enlargement. Eur Urol. 2007; 52: 503-9.
4. Stamatiou KN, Zaglavira P, Skolarikos A, Sofras F: The effects of lovastatin on conventional medical treatment of lower urinary tract symptoms with finasteride. Int Braz J Urol. 2008; 34: 555-61; discussion 561-2.
5. Platz EA, Leitzmann MF, Visvanathan K, Rimm EB, Stampfer MJ, Willett WC, et al.: Statin drugs and risk of advanced prostate cancer. J Natl Cancer Inst. 2006; 98: 1819-25.



***Dr. Konstantinos N. Stamatiou***
*Department of Urology*
*University of Crete, Greece*
*Piraeus, Greece*
*E-mail: stamatiouk@gmail.com*