Laparoscopy Assisted *'U'* Configuration Bilateral Ileal Ureter in Pelvic Lipomatosis with Bilateral Ureteric Obstruction

Manickam Ramalingam,[1] Kallappan Senthil,[2] Anandan Murugesan,[1] Mizar Ganapathy Pai,[2]

[1] Associate Professor, Department of Urology, PSG Institute of Medical Sciences and Research, PSG hospitals, Peelamedu, Coimbatore-641004, India
[2] Consultant Urologist, Urology clinic, Avinashi road, Coimbatore, India

Corresponding Author:

Manickam Ramalingam, MD
Associate Professor, Department of Urology, PSG Institute of Medical Sciences and Research, PSG hospitals, Peelamedu, Coimbatore-641004, India

Tel: +91 422 224 1138
E mail: uroram@yahoo.com

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INTRODUCTION

Pelvic lipomatosis is a benign proliferation of adipose tissue predominantly in the pelvic retroperitoneum. Involvement of the bladder and ureter may cause bilateral hydroureteronephrosis and low capacity bladder.(1) We present the case report of a patient with pelvic lipomatosis causing bilateral hydroureteronephrosis with low capacity bladder managed by laparoscopy assisted 'U' configuration bilateral ileal ureter.

CASE REPORT

A 45 year old gentleman presented with lower abdominal pain with mild voiding and storage lower urinary tract symptoms for a year. Clinical examination revealed mild lower abdominal distension and the prostate was felt a bit higher level in the pelvis. Serum Creatinine was 1.6 mg/dl. Micturating cystourethrogram showed a tear shaped, low capacity (100 ml) bladder with irregular contour (Figure 1). Computed tomography confirmed the diagnosis of pelvic lipomatosis and bilateral hydroureteronephrosis with obstruction below the level of pelvic brim (Figure 2). There was no bowel or blood vessel involvement. Tc99m-DTPA (Diethylene Triamine Pentacaetic Acid) renogram showed bilateral reduced cortical function with delayed transit time, and prolonged T1/T2 (Figure 2). Urodynamic evaluation revealed small

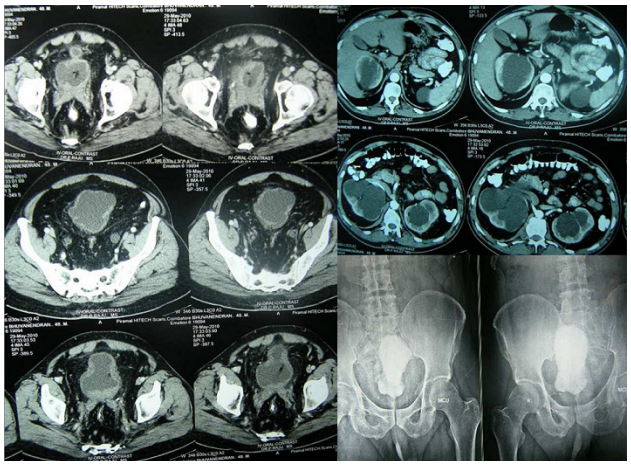

Figure 1. CT image showing the perivesical pelvic lipomatosis and cystogram showing 'Tear drop' Bladder

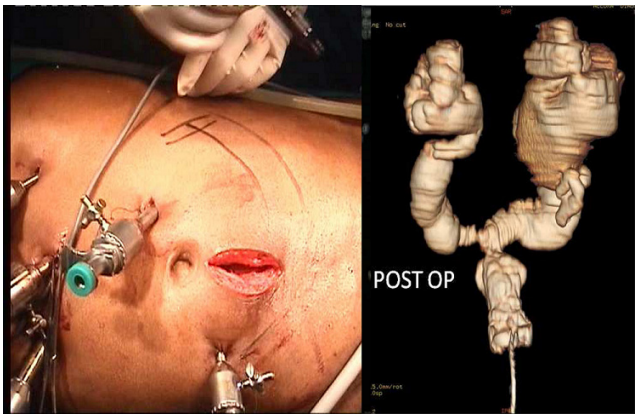

Figure 3. Port positions (with incision for ileum retrieval) and post-operative radiological image of ureter and bladder

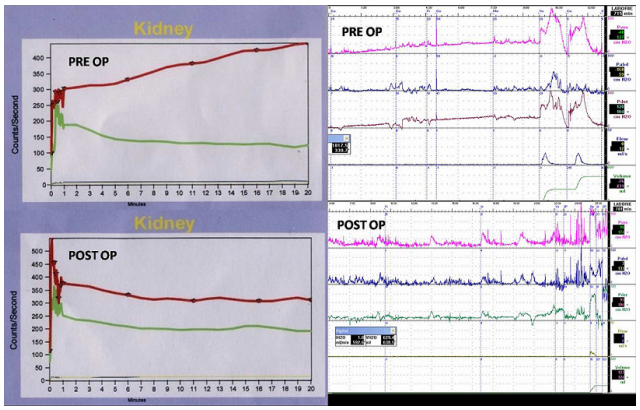

Figure 2. Pre operative and post operative O 'Reilly curves and Urodynamic studies

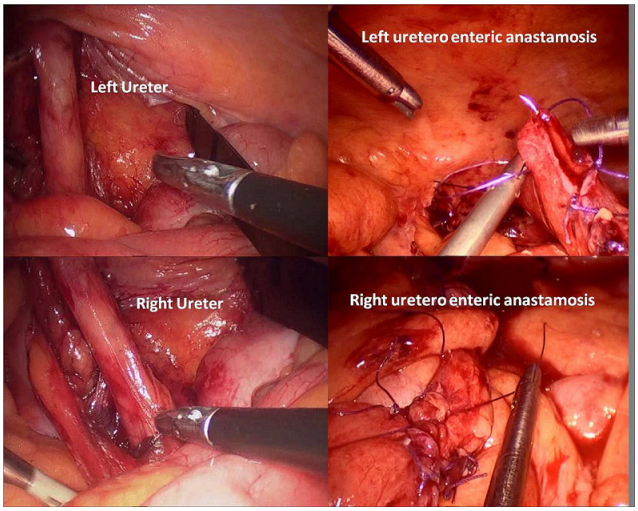

Figure 4. Right and left ureter mobilization and uretero ileal anastomosis

capacity, poor compliance bladder (Figure 2). Cystoscopy revealed excessive bullous edema around the bladder base involving the trigone. Biopsy of the bullous lesion showed chronic nonspecific cystitis.

Under general anesthesia, patient in supine position, laparoscopy was done with 5 ports (one 10 mm supraumbilical port, two 5 mm ports in pararectus area and 1 port in each flank) (Figure 3). Laparoscopy revealed abundant fatty tissue in the pelvis completely surrounding the bladder, and hence only the bladder dome could be dissected. The right and left colon were mobilized by incising the line of Toldt and the ureters were dissected bilaterally (Figure 4). Through a 5 cm subumbilical incision, 30 cm distal ileal segment was isolated and prepared with povidone iodine. Ileo-ileal continuity was restored extracorporeally. Segment internalized, abdomen closed and laparoscopy continued. The ends of the ileal loop were anastomosed with the proximal ureter on each side keeping the ileal segment in a '*U*' shaped configuration (Figure 4). Transverse cystotomy was done on the dome of the bladder (Figure 5). The dependent portion of the loop opposing the cystotomy was detubularised and ileo-cystostomy completed using 3-0 polyglactin interrupted sutures (Figure 5). As the bladder was completely encased in the inflammatory tissue it was

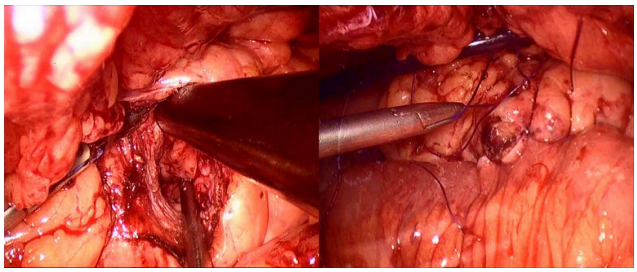

Figure 5. Cystotomy at the dome of the bladder and ileovesical anastomosis

possible to dissect only the dome of the bladder. Hence a satisfactory augmentation of the bladder was not possible. Suprapubic catheter and tube drain were placed and port sites closed.

Surgery lasted 360 minutes with 350 ml blood loss. The patient needed opioid analgesics for one day and subsequently the pain control was satisfactory with simple non-steroidal anti-inflammatory drugs. Post operatively, patient developed transient azotemia which was managed conservatively. Drain was removed on the day 6 and patient discharged on day 10. Supra pubic catheter was removed on day 14. Follow up cystogram was done on 21st day to detect any extravasation. Urethral Foley catheter was removed on the 21st day. Serum creatinine was 1.2 mg/dl. Electrolytes were normal. Isotope renogram showed stabilized renal function with improved drainage on the left side (Figure 2). Post-operative urodynamic study revealed improved compliance (Figure 2). He voids 6-7 times a day, around 100-200 per void, between mandatory self-intermittent catheterization twice a day. Residual urine was around 100 ml. Ten months after surgery patient remains asymptomatic.

DISCUSSION

Management of pelvic lipomatosis ideally should involve excision of adipose tissue.[1] But, loss of tissue planes with organ and vessel infiltration precludes complete excision and ileal conduit is the preferred management for ureteric obstruction.[1] Ileal replacement of ureter is done for long ureteric replacements, when the serum creatinine is less than 2 mg/dl. In this patient bilateral ureteric obstruction was also associated with small capacity bladder. Hence, the dependent portion of the '*U*' configuration was designed to be used for bladder augmentation and the proximal and distal limbs for relief of ureteric obstruction.[2]

'*U*' configuration of ileal ureter was used since it was technically easier. Such configurations have been described earlier.[2-5] Bladder outflow obstruction could not be corrected since the lipomatous tissue around the bladder neck and urethra were not amenable to removal. Hence he is being managed currently by self-intermittent catheterization. Laparoscopic unilateral ileal ureter has been reported previously.[6,7] To our knowledge this is the first report of laparoscopy assisted bilateral ileal replacement of ureter and ileal augmentation for pelvic lipomatosis. Laparoscopy is associated with lesser post-operative pain and hospital stay. The prolonged hospital stay in our patient was due to transient post-operative azotemia.

CONCLUSION

In bilateral ureteric obstruction associated with low compliance bladder laparoscopy assisted bilateral ileal ureter replacement using a *'U'* configuration ileal loop for concomitant augmentation cystoplasty is a viable procedure.

CONFLICT OF INTEREST

None declared.

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