CASE REPORT

Laparoscopic Ureteral Reimplantation After Multiple Open and Endoscopic Abdominal Surgeries for a Ureteral Stricture Complicated by Endometriosis: A Case Report

Chester Lorenz C. Chacon, MD; Dinno Francis A. Mendiola, MD, FPUA; Jose Benito A. Abraham, MD, FPUA and Ernesto L. Gerial, Jr., MD, FPUA

Department of Urology, National Kidney and Transplant Institute

Previous abdominal surgeries have been viewed as a relative contraindication to laparoscopy. The authors report a case of a distal third ureteral stricture previously managed by multiple endoscopic and open procedures and successfully repaired with an exclusively laparoscopic approach.

A 37-year-old female, diagnosed case of chronic endometriosis had previously undergone an open excision of left ovarian cyst and an ipsilateral open psoas hitch reimplantation. Her right distal third ureteral stricture had been on chronic ureteral stent replacement for the past three years. After a comprehensive preoperative evaluation, the patient underwent a successful and uncomplicated laparoscopic ureteral reimplantation on the left. The authors describe their surgical technique and the challenges they encountered therein.

Recurrent distal third ureteral stricture previously managed by multiple open and endoscopic surgeries is a challenging disease to manage. An experienced minimally-invasive surgical team can successfully manage this problem laparoscopically without immediately resorting to open.

Key words: laparoscopy, renal descensus, ureteral reimplantation, distal third stricture

Introduction

It has been a long-held dictum that multiple previous abdominal surgeries are relatively contraindicated for laparoscopic surgery. This is mainly due to the anticipated post-operative adhesions in the field that increase the difficulty in conducting the surgery.

Though several studies have already shown that robotic and laparoscopic surgery can be safely performed in patients with multiple previous abdominal surgeries, it is still a focus of discussion among surgeons.

To add to this, the presence of urinary tract endometriosis further increases the surgical difficulty. Up to 47% of patients with ureteral endometriosis have undergone nephrectomy at the time of diagnosis.[1] Majority of these patients present with flank pain and hematuria. Post-operative histopathologic studies have demonstrated the presence of endometrial tissue involving the surrounding urinary tract, as well as the urothelial mucosa in some cases.

The Case

Presented here is a case of a recurrent right distal third ureteral stricture in a 37-year old female who is a diagnosed case of endometriosis who had been advised ureteral surgery due to bilateral distal third ureteral strictures. (Figure 1) The patient had undergone an open excision of ovarian cyst, left and

a open psoas hitch on the left. Her right distal third ureteral stricture had been on chronic ureteral stent replacement since three years prior the procedure. The patient had been hesitant on undergoing a third open procedure.

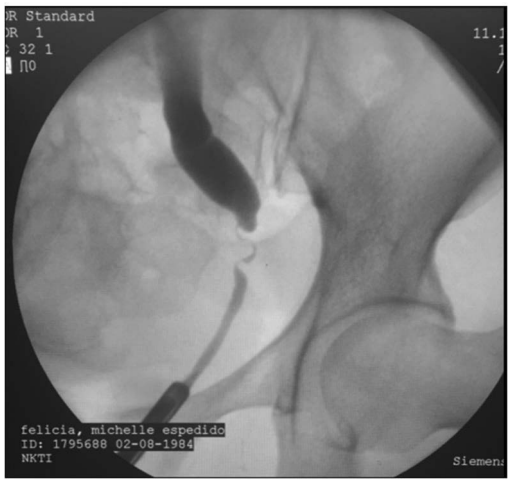

Figure 1. Pyelography films of the bilateral distal third ureteral stricture. The patient had undergone a previous open psoas hitch on the left.

Thus, the proposed surgical plan was to perform a cystoscopy, double J stent removal, right; laparoscopic ureteral reimplantation with intra-operative double J stent insertion. The possibility of converting to an open procedure was thoroughly discussed, along with potential intraoperative complications such as hemorrhage and bowel perforation. The patient consented for the procedure.

With consent secured, the patient was placed under general endotracheal anesthesia. A cystoscopy was done. The findings showed a normal anterior urethra, slit-like ureteral orifices bilateral, left ureteral reimplant orifice located in the left bladder dome, Double J Stent protruding at the right ureteral orifice, smooth bladder mucosa, no encrustations, stones or masses seen. The double J stent was removed, and a retrograde pyelography was done. With the distal third ureteral stricture was identified, the surgeons proceeded with laparoscopic ureteral reimplantation. (Figure 2)

The patient was placed on left lateral decubitus. The port placement are as follows: a 10mm port was inserted at the right para umbilical area for the camera and abdominal insufflation up to 15 mm Hg. A 10mm assist port was inserted at the right upper quadrant. A 5 mm working port was inserted at the right lower quadrant, and a 5mm port inserted in subxiphoid area. (Figure 3)

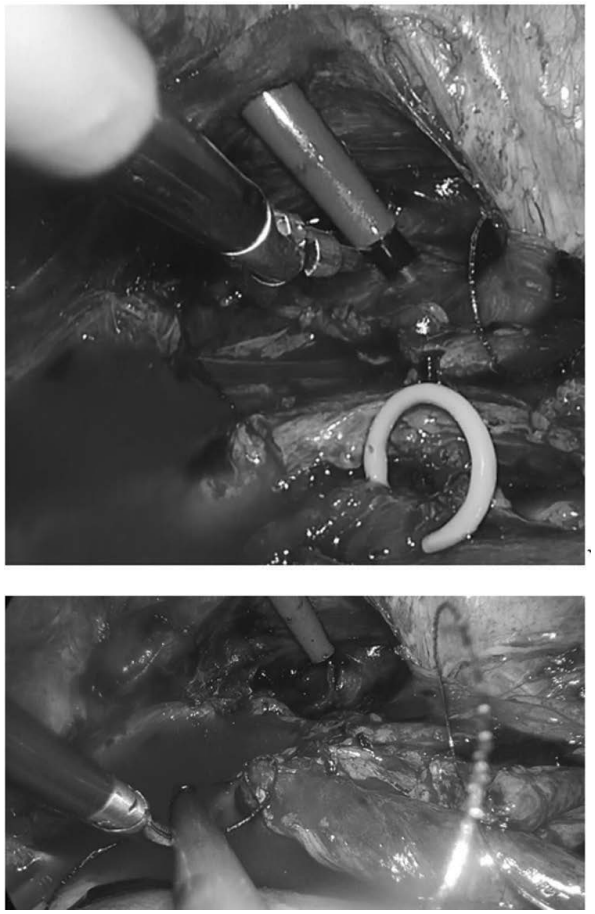

Figure 2. Ureteroneocystostomy done on the left ureter.

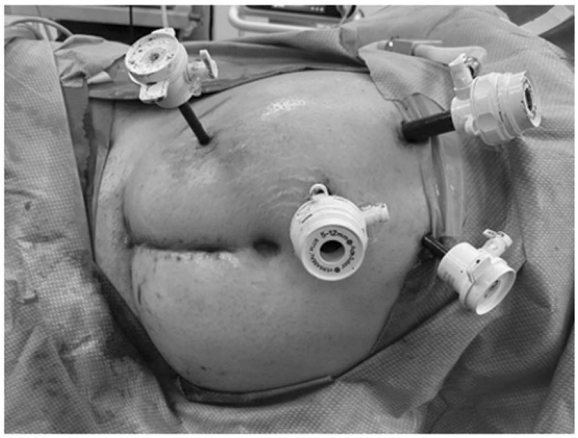

Figure 3. Trochar placement done for laparoscopic ureteral reimplantation.

The ascending colon was mobilized antero-medially by dissecting along the white line of Toldt exposing the gonadal vein and right ureter. The ureter was isolated and dissected distally toward the bladder and proximally toward the renal hilum. After adequate exposure, the right ureter was identified showing severe proximal dilatation with severe adhesions in the distal ureter. Multiple endometrial implants were seen surrounding the distal ureter and right and left ovary. The dilated ureter was transected proximally and spatulated. Periureteral tissues surrounding the distal portion of ureter was excised and sent for histopathology. The urinary bladder was then opened anteriorly approximately 1.5cm in length. An extravesical ureteroneocystostomy using an anterior Lich-Gregoir technique was done using 3-0 V-lock sutures. An indwelling ureteral stent was inserted retrogradely before completing the anterior repair. A Jackson-Pratt drain was placed and abdominal closure was done, concluding the procedure.

The postoperative course of the patient was unremarkable. The patient was able to ambulate on the postoperative day 1. The surgical drain was removed on the postoperativce day 3 and was discharged with catheter. The indwelling Foley catheter was subsequently removed after two weeks at the outpatient clinic.

The patient had her double J stent removed on an outpatient basis 4 months after the surgery. A repeat diuretic renal scan was performed. Findings showed that the right kidney had tracer retention, which had good response to diuresis, denoting resolution of ureteral obstruction.

Discussion

The most common etiology of ureteral strictures is iatrogrenic, owing to a previous surgery. But there have been several cases of endometriosis that caused concomitant ureteral strictures. These cases have been reported in literature before. Specifically, 0.3 to 6% of patients with endometriosis have been diagnosed with urinary tract endometriosis, more often due to an incidental finding during laparoscopy, as in these cases.[1] These cases and their management varied depending on the involved ureteral segments, with corresponding variations in the approach of repair, depending on the extent of the injury.[2] Several case reports have mentioned the use of hormonal therapy as an adjunct to surgical removal of endometrioma.[3] In this case, the cause of stricture formation was direct involvement of the ureter by endometriotic tissue. This has been performed in other cases, varying from laparoscopic uretero-ureterostomy to laparoscopic Psoas hitch. Nevertheless, the outcomes of laparoscopic approaches compared to open procedures is comparable.[4]

Complications of the laparoscopic ureteral reimplantation for endometriosis have been observed. These include, but are not limited to, vesicovaginal and ureteral fistulas, and bladder leakage.[2]

The most prominent difference noted in the cases was the history of recurrent ureteral reimplantation and multiple abdominal surgeries that proved a challenge in conducting the surgery. Nevertheless, the successful repair and reimplantation of this case demonstrates that, despite multiple previous surgeries, there are still good outcomes in doing the laparoscopic approach.

This case report demonstrated that despite multiple previous abdominal surgeries, multiple reimplantation and open surgical repair of the distal third ureteral stricture, laparoscopic ureteral reimplantation can still be safely performed.[3] Good surgical experience, careful adhesiolysis, and adequate exposure are essential in the success of the surgery.[5] The outcomes of the laparoscopic approach have been comparable with that of open procedures. With the benefit of earlier recovery time and relatively less post-operative pain

Conclusion

With the advent of laparoscopy, an increasing number of surgical procedures that have often necessitated an open procedure have been done through minimally invasive surgery. Urologic procedures that have been previously done through an exclusively open approach are now being done through laparoscopy. Studies have already demonstrated comparable outcomes with minimal post-operative complications.

The background of multiple previous abdominal surgeries must not hinder the surgeon in rendering a laparoscopic approach to patient management.

The overall benefit of earlier recovery contributes to overall good patient care. Despite this, surgical and patient safety during the conduct of the operation must always be top priority. Ample surgical experience is thus essential in approaching recurrent ureteral strictures.

Conflict of Interest

The authors declare no conflicts of interest in writing the study.

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