

Laparoscopic Pyeloureterostomy: Experience in Three Cases

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ABSTRACT

Purpose: To report our experience with transperitoneal laparoscopic pyeloureterostomy for duplication of the collecting system.

Patients and Methods: Since January 2003, two adult patients with incomplete duplication of ureter with ureteropelvic junction obstruction of the lower moiety and a 4-month-old male baby with complete duplication of the ureter with reflux in the lower moiety underwent transperitoneal laparoscopic pyeloureterostomy. The baby also had excision of the lower-moiety ureter.

Results: There was no significant intraoperative or postoperative morbidity. Follow-up imaging revealed good drainage.

Conclusion: With increasing experience in laparoscopic reconstructive urologic procedures, laparoscopic pyeloureterostomy is a feasible option, even in infants.

INTRODUCTION

HISTORICALLY, THE MAJORITY OF DUPLICATIONS of the ureter have gone unnoticed. Anomalies of duplication with clinical implications are less common, and incomplete duplication of the ureter with lower-moiety ureteropelvic junction (UPJ) obstruction is rare. The patients present with recurrent loin pain and urinary-tract infection. In cases of complete duplication, urinary tract infection may be the presenting feature.¹⁻³

Each patient requires individualized treatment. Management depends on several factors, including the functional status of the affected portion of the kidney. Laparoscopic pyeloureterostomy has not been reported to our knowledge. Here, we present laparoscopic management of three such cases.

CASE REPORTS

Case 1

An 18-year-old woman presented with dull right loin pain of 3 months' duration. There was no overt urinary-tract infection. An intravenous urogram (IVU) confirmed a normal left kidney and incomplete duplication of the right kidney with lower-moiety UPJ obstruction.

With the patient under general anesthesia, a right retrograde pyelogram was done, which confirmed the anomaly. A double-J stent was placed,⁴ but the upper end went into the upper moiety rather than the desired lower moiety. The patient was arranged in the right lateral position with a 70° tilt for a transperitoneal four-port approach. Pneumoperitoneum was created, and a 10-mm supraumbilical port was inserted for the camera. A 5-mm subcostal port and a 5-mm port in the right iliac fossa were used for hand instruments. Another 5-mm port in the right flank was used for suction and irrigation.

The ascending colon was mobilized until the upper ureter with the Y junction of the duplex system was easily visible (Fig. 1A). The dilated renal pelvis of the lower moiety was mobilized adequately. Part of the pelvis lying close to the upper moiety was incised for about 2.5 cm, and the UPJ along with the lower-moiety ureter was excised up to the Y junction. The upper-moiety ureter opposing the pyelotomy was incised vertically on the lateral aspect. The posterior layer of the ureteropyelostomy was created by continuous suturing using 5-0 absorbable (polyglycolic acid) sutures. Then the stent in the upper moiety was withdrawn and repositioned in the lower-moiety renal pelvis (Fig. 1B). The anterior layer of the ureteropyelostomy was closed in a similar manner (Fig. 1C). A tube drain was left in the right flank from the peripelvic area. Port sites were closed with 2-0 absorbable sutures.

Postoperatively, the drainage was 60 mL on the first day and