Original Article

Ureteroureterostomy In A Case With Duplex System Ureterocele, A Case Report

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Abstract

Summary
A 7-year-old girl presenting with recurrent febrile urinary tract infection (UTI) underwent a right low upper to lower ureteroureterostomy (UU) for right duplex system ureterocele (DSU) with promising short-term results.

Keywords: *Ureteroureterostomy, duplex system ureterocele.*

Background

Duplication renal anomalies is a challenging topic that faces pediatric urologists, with a diverse range of presentations posting several challenges in the management of such cases.
The management of these cases is best done case by case and should be individualized according to each case.

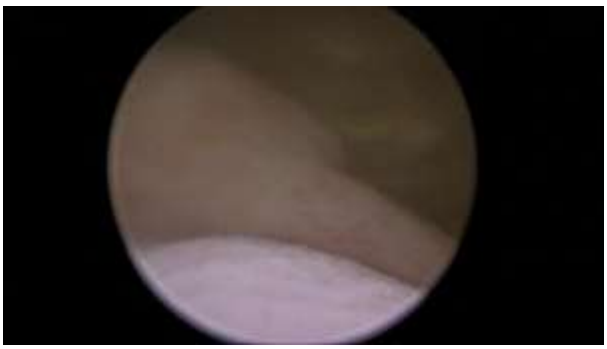
Case presentation

A 7-year-old girl presenting with recurrent febrile UTI.
Pelvi-abdominal US showed right duplex kidney with atrophy of upper moiety and marked hydroureteronephrosis of upper moiety down to the bladder where a right sided ureterocele is seen in the bladder on the right side {Figure 1}.
The diameter of the upper moiety pelvis was 25 mm, the size of the ureterocele was 40 mm.
Intravenous pyelography showed dilatation of the right pelvicalyceal system and ureter with suspicion of duplex right kidney.
Ascending cystogram showed no vesico-ureteric reflux.
CTUT confirmed the ultrasound findings {Figure 2}.
A Dimercaptosuccinic acid (DMSA) scan showed a photopenic area at the upper pole of the right kidney and a differential function of 43% on the right and 57% on the left {Figure 3}.

Figure (1) **Figure (2)** **Figure (3)**

The patient was planned for right retrograde and proceed to right low upper to lower UU.

Cystoscopy was done and showed a right sided ureterocele with lower moiety ureter seen proximal to it {Figure 4,5}.



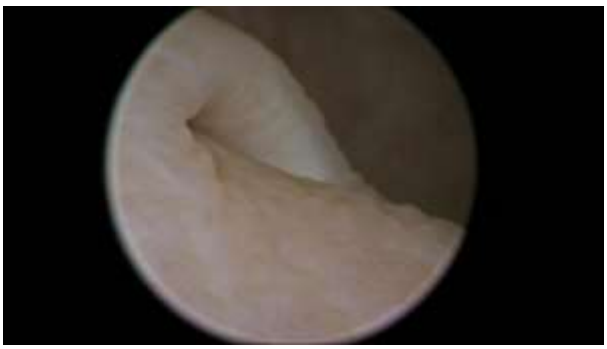


Figure (4) **Figure (5)**

Retrograde study was done through the ureteric orifice proximal to the ureterocele and showed a normal sized ureter which was not dilated or tortuous suggesting that this is the lower moiety ureter {Figure 6}.

A ureteric catheter was fixed in this ureter, and a urethral catheter. The patient's position was changed from lithotomy position to supine position.

A modified Gibson incision was made two finger breadth anterior to anterior superior iliac spine, five centimeters in length, the anterior abdominal wall muscles were opened lateral to the rectus muscle.

The retroperitoneal space was developed, the ureters identified with the lower moiety ureter containing the ureteric catheter.

The upper moiety ureter was dissected in a limited area of intended anastomosis, keeping the lower moiety in place.

The upper moiety ureter was cut, and the distal part aspirated and ligated.

A ureterotomy was made in the lower moiety ureter anterior surface equal to the diameter of upper moiety ureter.

The anastomosis was done between both ureters using 6/0 Vicryl sutures in continuous manner starting with the posterior wall {Figure 7}.

The retroperitoneal space was drained with a 10 Fr Nelaton drain, then the abdominal wall was closed in layers.

The ureteric catheter was left in place for 24 hours, then removed, and the drain was removed the next morning, and the patient was discharged.

Figure (6)

Figure (7)

Investigations

1. Pelviabdominal US
2. IVP
3. Ascending cystogram
4. CTUT
5. DMSA scan

Treatment

Right-sided low upper to lower UU

Outcome and follow-up

The patient was seen after one week, the wound was clean and there was no loin pain, fever, or urinary symptoms.
The patient was seen in 1, 3, 6 and 12 months postoperative, the follow-up visits consisted of history taking, examination, pelvi-abdominal US, and urine analysis and culture.
The patient had a smooth follow-up period with resolution of symptoms, and the backpressure, and decompression of the ureterocele.

Discussion

Autopsy studies have identified ureteral duplication in 1 in 125 (0.8%) patients and the frequency of duplications increases to 8% in patients presenting with UTI, they are four to seven times more common in females. Ureteral duplication occurs bilaterally in 15% to 20% of cases. {1,2}

UU is a well-known procedure dating from 1928, used in cases with duplication renal anomalies {3}, it is relatively less invasive than other surgical management options. The upper moiety ureter (obstructed) is anastomosed to the lower moiety ureter (non-obstructed). It is an extravesical approach avoiding the morbidity associated with ureteroneocystostomy, also avoiding the morbidity associated with upper tract ablative approach.

The option of UU as a primary intervention for cases with DSU is a good option, possibly a definitive management without the need for further interventions, providing rapid relief of symptoms , decompression of the obstructed moiety and the ureterocele.

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