



Congenital UPJ Obstruction

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Introduction

Ureteropelvic Junction (UPJ) obstruction is a partial or intermittent total blockage of the flow of urine that occurs where the ureter enters the kidney. The etiology of UPJ obstruction includes both congenital and acquired conditions. UPJ obstruction is the most common pathologic cause of antenatally detected hydronephrosis.

Epidemiology

Epidemiologic features of UPJ obstruction are as follows:

Ultrasonography reveals fetal upper urinary tract dilatation in approximately one in 100 pregnancies; however, only one in 500 of those infants are later diagnosed with significant urologic problems.

UPJ obstruction is found in approximately 50% of patients diagnosed with antenatal hydronephrosis.

The male-to-female ratio of UPJ obstruction is 3-4:1.

In general, the left kidney is more commonly affected than the right kidney.

UPJ obstruction is less common in adults than in children but is not rare in either population.

UPJ obstruction is bilateral in 10% of cases.

Etiology

Possible etiologies for UPJ obstruction include the following: Intrinsic obstruction may result from stenosis due to scarring of ureteral valves. Ureteral hypoplasia may result in abnormal peristalsis through the UPJ. Malrotation of kidney.

Case Presentation

A 3 year old male Hindu child presented to the surgical OPD with complaint of abdominal lump for past 3-4 months.

Pt was relatively asymptomatic before 3-4 months then the parents noticed swelling in the left lumbar gradually increasing in size that was not associated with any complaints...

No history of fever, vomiting, burning micturition or decreased urine output.

Examination findings were suggestive of 7 cm × 5 cm soft, non-tender palpable lump in the left lumbar region. The swelling was ballotable and does not move with respiration (Figure 1).

Investigation

All routine investigation parameters including s. Cr and s. urea were within normal limits.

Ultrasound: Enlarged left kidney with gross hydronephrosis and dilation of renal pelvis with thinning of renal parenchyma (AP diameter 63 mm) with smooth narrowing at PUJ. Rest all findings were normal.

CT IVP: Left kidney is Enlarged in size with gross dilation of pelvicalyceal system and renal pelvis with thinned out cortex (thickness of residual cortex is 2 mm) suggestive of PUJ Obstruction with absent excretion of contrast medium upto 4 h s/o delayed or non functioning kidney.

Renal DTPA scan: left kidney was not visualized s/o nonfunctional left kidney with normal functioning right kidney.

Management protocol for congenital UPJ obstruction: The treatment strategies for UPJ obstruction have shifted significantly in the last several years. The gamut of current surgical

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Figure 1:

treatments for UPJ obstruction includes the following:

- Laparoscopic pyeloplasty
- Open pyeloplasty
- Endopyelotomy
- Endopyeloplasty
- Robotic-assisted laparoscopic pyeloplasty
- Total nephrectomy.

Management in this patient with nonfunctional left kidney: As the left kidney was totally nonfunctional and right kidney was normal functioning, decision to go for total nephrectomy was taken.

Per operative findings: Severely dilated left kidney with dilated renal pelvicalyceal system was present with thinning of the ureter present at the level of UPJ.

Decisions for total nephrectomy was then taken.

Discussion

The critical decision to be made in dealing with suspected UPJ obstruction is whether the radiologic findings correlate with the physiologic picture. In other words, severely dilated hydronephrotic kidneys may, in fact, be found to be draining well when studied appropriately. Defining the exact anatomy and function of these kidneys is crucial when evaluating and treating these patients.

The treatment strategies for UPJ obstruction have shifted significantly in the last several years.

While open pyeloplasty is still considered the criterion standard for treatment of UPJ obstruction in infants, laparoscopic pyeloplasty, with or without robotic assistance, is the treatment of choice in older children and in most adults.

Future and Controversies

The future of treatment of Ureteropelvic Junction (UPJ) obstruction will certainly include a broadening of the application of laparoscopic techniques. As laparoscopic pyeloplasty has gained acceptance and the surgical experience has increased, the procedure time has become shorter. The use of robotic assistance may broaden the application of laparoscopy.