

**Case Report**

Open Access, Volume 2

# Pelviureteric Junction Obstruction in an Ectopic Right Kidney- Mimicking Vesicoureteric Junction Obstruction: Radiological Diagnostic Dilemma

*Jaini Modi\**; *Dhvani Shah*; *Apoorva Kulkarni*; *Abhaya Gupta*; *Paras Kothari*  
*Sion Hospital, Mumbai, India.*

**Abstract**

Anomalous kidneys are mostly asymptomatic and are often found incidentally during physical or radiological investigations for urological or other medical complaints. 1-month old male presented with difficulty in micturition and crying during micturition. On examination, an ill-defined lump was found in the right iliac fossa. Ultrasound abdomen was suggestive of gross right sided hydronephrosis with paper thinning of cortex with hydroureter. Micturating cystourethrogram was normal.

On retrograde pyelogram, Vesicoureteric junction obstruction was suspected. Right ureterostomy was planned. Intra operatively, right ureter was not dilated. Ureter traced, pelvis & kidney found in right iliac fossa after thorough search.

It was a pelvic ureteric junction obstruction in a right ectopic kidney with dilated pelvis. Modified Anderson hynes pyeloplasty was done. Dj stent was inserted and vesico ureteric junction could be negotiated. It was concluded that, it was not ureter, which was dilated, it was dilated pelvis seen in right iliac fossa, which was seen in retrograde pyelography. There was no vesico ureteric junction obstruction. Patient was started on oral feeds on post op day 1 and discharged on post op day 3.

The ectopic kidney always remains a challenge because of complex neurovascular anatomy, presence of viscera and associated UPJO and other genital abnormalities. Modified Anderson-Hynes pyeloplasty is a feasible option with excellent outcome. We present a case of right renal ectopia with PUJO which was managed successfully with surgery.

**Keywords:** Ectopic kidney; Ureteropelvic junction obstruction; Retrograde pyelography; Pyeloplasty.

**Manuscript Information:** Received: Mar 14, 2022; Accepted: Apr 14, 2022; Published: Apr 20, 2022

**Correspondance:** Jaini Modi, Sion Hospital, Mumbai, India. Email: [jainimody@yahoo.com](mailto:jainimody@yahoo.com)

**Citation:** Modi J, Shah D, Kulkarni A, Gupta A, Kothari P. Pelviureteric Junction Obstruction in an Ectopic Right Kidney-Mimicking Vesico-ureteric Junction Obstruction: Radiological Diagnostic Dilemma. *J Surgery*. 2020; 2(1): 1019.

**Copyright:** © Modi J 2022. Content published in the journal follows creative common attribution license.

## Introduction

Ectopic kidneys were described as early as the 16th century by anatomists and may be found in a variety of locations, i.e. pelvic, iliac, abdominal, and thoracic contralateral or crossed. The actual incidence varies among autopsy series but is about 1 in 900. There is no apparent difference between the rates in male and females at autopsy but, because of the higher frequency of urological investigation in females, ectopia has been more readily recognised in them. Left-sided ectopia is reported slightly more than the right and the incidence of pelvic ectopia is estimated at 1 in 2100-3000 at autopsy [1]. Most ectopic kidneys are asymptomatic and are discovered fortuitously.

Renal ectopia is a rare condition involving failure of the mature kidney to reach its normal location within the renal fossa and is frequently associated with Ureteropelvic Junction Obstruction (UPJO). We report our experience in managing a case of ectopic pelvic kidney with UPJO, which was managed with pyeloplasty with excellent outcome.

## Case presentation

1- month old male child antenatal diagnosed case of right hydronephrosis without any other complaints presented for post-natal follow up.

On examination lump was found in right iliac fossa. As a part of work up ultrasound, complete hemogram with renal function tests were done. Usg kub was suggestive of gross right sided hydronephrosis with paper thinning of cortex with hydroureter. Micturating cystourethrogram was normal.

Patient was posted for cystoscopy with retrograde pyelography to know the cause of right sided hydronephrosis with hydroureter. On cystoscopy-right orifice was normal. Under fluoroscopic guidance, dye was injected through cystoscopic working channel into right ureteric orifice. Ureter appeared to be dilated with dilated pelvi calyceal system with? Functional vesicoureteric junction obstruction.

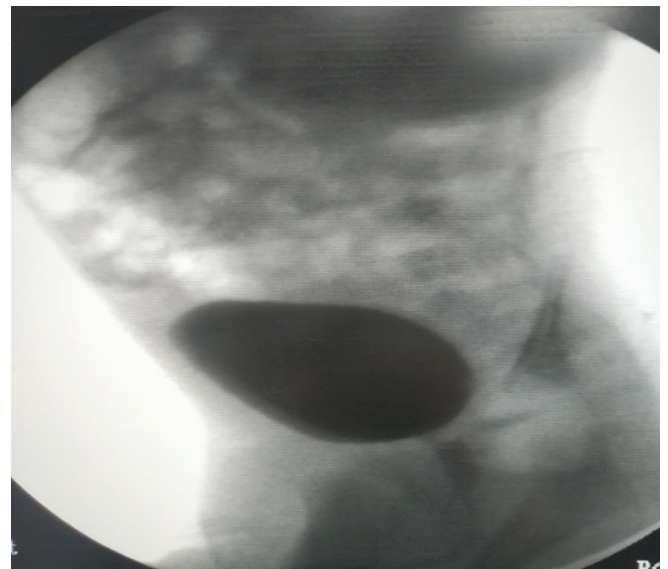
Decision was taken to do right ureterostomy. Intra operatively, right ureter was not dilated. Ureter traced upwards, pelvis & kidney found in right iliac fossa. Abrupt narrowing was seen in ureteropelvic junction.

It was pelvi ureteric junction obstruction in a right ectopic kidney. Decision was taken to go ahead with modified Anderson hynes pyeloplasty. Dj stent was inserted. Vesico ureteric junction could be negotiated .It was concluded that, it was not ureter, which was dilated, it was dilated pelvis seen in right iliac fossa, which was seen in retrograde pyelography. There was no vesico ureteric junction obstruction.

Patient was started on oral feeds on post op day 1 and discharged on post op day 3. As institution protocol patient was called for stent removal after 6 weeks. Patient was asymptomatic & stable on follow up. Histopathology report was consistent with pelvi ureteric junction obstruction.



**Figure 1:** Image showing retrograde pyelography. Ureter appeared to be dilated with? vujo.



**Figure 2:** Showing micturating cystourethrogram.

---

## Discussion

The urinary system anomalies affect approximately 10% of population [2]. Ectopic kidney is described as abnormal localization of a kidney due to a developmental anomaly, and it occurs as a result of a premature halt in the migration of the kidney to its normal location during the embryonic period. Pelvic, iliac, abdominal, thoracic, contralateral, and crossed ectopic kidneys can occur.

The incidence of the pelvic kidney has been approximated between 1 in 2200 and 1 in 3000 [3] whereas the incidence of one normal and one pelvic kidney is 1:800-1:3000 [4]. Reportedly, 56% of ectopic kidneys have hydronephrosis, of which 70% are related to UPJO. This may be related to malrotation and an anteriorly placed pelvis, which may lead to impaired drainage of urine from a high insertion of the ureter or an anomalous vasculature that partially blocks one of the major calyces or the upper ureter.

The ectopic kidney disease can be associated with anomalies of vertebral column, lower gastrointestinal tract, genital tract, or spinal cord and meninges. The pattern of the renal vascular network is dependent on the position of the ectopic kidney and is completely anomalous. More inferiorly situated ectopic kidneys may be supplied by one or two main renal arteries arising from the distal aorta, aortic bifurcation, and the common or external iliac arteries. The inferior mesenteric arteries can also provide blood supply to these kidneys.

The hydronephrotic pelvic kidney presents special treatment challenges because unlike lumbar kidney, the posterior approach is precluded by the sacrum [5] the presence of viscera, aberrant vessels, and nerves if approached from the anterior aspect and [6] poor outcomes with endoscopic approaches because of the high insertion of ureter and anomalous vessels [5-7]. The treatment for the PUJO in a renal ectopia is classical modified Anderson- Hynes pyeloplasty. The renal ectopia may present a diagnostic problem when acute disease develops in the kidney, and there is always a danger that an unwary surgeon may be tempted to remove it as an unexplained mass [8].

## Conclusion

Ectopic kidney always remains a challenge because of complex neurovascular anatomy, presence of viscera and associated UPJO, but a dependent drainage with pyeloplasty is a feasible option with excellent outcome as was in our case.

## References

1. Wein AJ, Kavoussi LR, Campbell MF. *Campbell-Walsh Urology*. Philadelphia, PA, USA: Elsevier Saunders. 2012.
2. Queisser-Luft A, Stolz G, Wiesel A, Schlaefer K, Spranger J. Malformations in newborn: Results based on 30,940 infants and fetuses from the mainz congenital birth defect monitoring system (1990-1998) *Arch Gynecol Obstet*. 2002; 266: 163-167.
3. Zafar FS, Lingeman JE. Value of laparoscopy in the management of calculi complicating renal malformations. *J Endourol*. 1996; 10: 379-383.
4. Gray SE, Skandalakis JE. Philadelphia, London, Toronto: W.B. Saunders Co; embryology for Surgeons – The Embryological Basis for the Treatment of Congenital Defects. 1972: 472-474.
5. Bauer SB. Anomalies of the upper urinary tract. In: Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA, editors. *Campbell Walsh Urology*. 9th ed. Philadelphia: Saunders Elsevier. 2007: 3278-3281.
6. Gupta M, Lee MW. Treatment of stones associated with complex or anomalous renal anatomy. *Urol Clin North Am*. 2007; 34: 431-441.
7. Gross AJ, Fisher M. Management of stones in patients with anomalously sited kidneys. *Curr Opin Urol*. 2006; 16: 100-105.
8. Russell RC, William NS, Bulstrode CJ, editors. *Baily and Love's Short Practice of Surgery*. 23rd ed. London, UK: Arnold. 2000: 1174.