



ORIGINAL RESEARCH PAPER

General Surgery

RIGHT PUJ NARROWING CAUSED BY RIGHT ABERRANT RENAL ARTERY : A CASE REPORT

KEY WORDS:

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INTRODUCTION

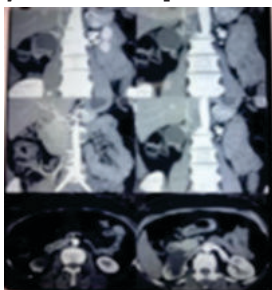
Ureteropelvic junction obstruction is usually intrinsic and is most common in children. Multiple renal arteries have been reported to occur in approximately 30% of cases(with a preponderance on the left side. With respect to the presence of multiple renal arteries, by a study of Sampaio et al.9), an inferior “accessory” or “aberrant” artery was found to cross anteriorly to the UPJ in 6.8% of the cases. In few specimens this inferior accessory artery pass close to the UPJ. Therefore, the presence of an anomalous vessel crossing the UPJ and causing obstruction is a very rare finding). Aberrant renal arteries to the inferior pole cross anteriorly to the ureter and may cause hydronephrosis. We describe a 52-year-old woman with hydronephrosis due to UPJ obstruction by an aberrant renal artery and review the literature in brief.

Case History

- 52 yr/F, admitted with C/O of pain right lumbar region since 8 months.
- O/E:Vitals, GPE, Systemic Exm.- WNL
- Haematological & routine biochemical investigations- WNL

USG Abdomen- Rt kidney measures 8.9x2.4cm with PT of 8mm at lower poles. There is dilatation of renal pelvis with max caliber of 16.4mm with abrupt narrowing at PUJ. No calculus seen. Rt kidney measures 8.9x2.4cm with PT of 8mm at lower poles. There is dilatation of renal pelvis with max caliber of 16.4mm with abrupt narrowing at PUJ. No calculus seen. Lt kidney measures 10.5x4.1cm with PT of 18.2mm at upper pole, normal in size and outline no e/o calculus and HDN. Imp- dilated rt renal pelvis with abrupt narrowing at PUJ-? PUJ obstruction.

NCCT KUB Lt kidney measures 11.3x5.4x5.3cm in size. It is normal in size, position & outline. Left PCS is compact, no calculus, no HDN. Rt kidney 9.1x4.2x4.2 cm in size. It is small in size normal outline. The Rt PCS shows mild dilatation with disproportionately, dilated Rt renal pelvis 20x26mm with thickened wall, mild peri renal fat stranding seen, no collection and calculus.. Imp- small rt kidney with mild HDN showing disproportionately dilated Rt renal pelvis ?Rt PUJ narrowing.

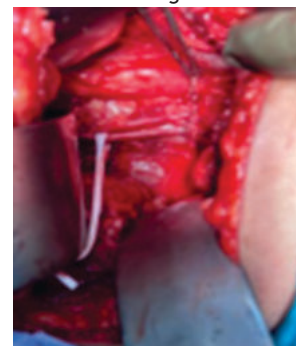


CT Urography Rt kidney measures 7.6x4.3cm with PT of 16mm at interpolar region, small in size, irregular in outline shows moderate HDN and ballooned out renal pelvis withy abrupt narrowing at PUJ. Lt kidney is 10.4x4.6cm with PT of 2.2mm at interpolar region, normal size and outline. Imp-small irregular outlined Rt kidney with moderate HDN and abrupt narrowing at PUJ s/o Rt PUJ narrowing.

Renal DTPA Scan Lt kidney –wnl differential function – 70% .Rt kidney it shows moderately impaired perfusion, differential function 30%.

Intra OP Findings

- Rt kidney was enlarged in size, HDN was present
- Rt pelvis was dilated and redundant
 - Rt aberrant renal artery was supplying lower pole of kidney arising from aorta anterior to IVC.
 - Aberrant Rt renal artery compressing the pelvi- uretric junction anteriorly causing significant PUJ narrowing resulting in proximal pelvicaeleceal dilatation
 - There was no calculus seen in PUJ
 - Rt gonadal vein was draining into rt renal vein



DISCUSSION

Aberrant renal vessels have been encountered with increasing frequency over the past decade. This is partly attributable to the more widespread use of angiography and other imaging modalities in recent years. Some knowledge of the embryology of the renal vessels is necessary to understand the frequent anomalies that may occur. With complicated development of the kidneys, through the three stages of pronephros, mesonephros and metanephros, and the migration of the definitive kidney (metanephros) from the pelvic region to the region of the posterior abdominal wall (in the lumbar area), the renal blood supply undergoes successive changes in its upward migration. Since arterial degeneration begins at the cephalic pole of the metanephros, the segmental branch to the lower renal pole is the one most likely to remain as an accessory artery. The association between lower polar aberrant vessels and a dilated renal pelvis was appreciated and this, acting in the nature of a

physical obstruction to the urine flow, seemed to provide a logical explanation for the condition. However, it has been suggested that the obstruction may result from a neuromuscular incoordination of the ureteropelvic junction and the vascular obstruction is a secondary rather than a primary event. However, the work of Johnson who studied the manometric pressures in such cases, and the electron microscopic evidence presented by Notley appear to favor mechanical obstruction. The symptom of vascular ureteropelvic junction obstruction may include colicky mid-abdominal pain, nausea and vomiting. Also, the patient may have significant weight loss and palpable ptotic kidney. However, our patient did not present such symptoms or signs, except abdominal pain.

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