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Case Report

Rare Case of Retrocaval Ureter of a 15-year-old Child

Humam Qaraschouli *[1], Rania Khalil [2], Ayman Maarouf [3], Maitham Badawy [4]

1. *Consultant Urology, Burjeel Farha/ Al Ain- Abu Dhabi, United Arab Emirate.*
2. *Specialist Radiology, Burjeel Farha/ Al Ain- Abu Dhabi, United Arab Emirate.*
3. *Consultant Pediatrics, Burjeel Farha/ Al Ain- Abu Dhabi, United Arab Emirate.*
4. *Specialist Anesthesia, Burjeel Farha/ Al Ain- Abu Dhabi, United Arab Emirate.*

*__Correspondence to:__ Humam Qaraschouli. Consultant Urology, Burjeel Farha/ Al Ain- Abu Dhabi, United Arab Emirate.

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Abstract

Retrocaval ureter is a rare congenital venous anomaly. This document presents the first reported case in the UAE, involving a 15-year-old patient who had experienced abdominal pain, vomiting, and nausea for several years without a definitive diagnosis until recently. After imaging studies confirmed the diagnosis, a segmental resection of the ureter with end- to-end anastomosis was performed. The patient's post-operative course was without complications.

Keywords: *retrocaval ureter, congenital venous anomaly, reported case children*

Introduction

Retrocaval ureter is a congenital venous abnormality. Because of its position it has been called retrocaval ureter, postcaval ureter, circumcaval ureter, deflected ureter and preureteric vena cava. In urologic texts, it is classified often under vascular abnormalities rather than ureteral anomalies (1). This rare situation normally presents in the third and fourth decade of life as typified by the ages of the presented cases. Patients can have different symptoms like right flank or abdominal pain which can be intermittent, dull or aching. Some patients can have recurrent urinary tract infection, vomiting, Nausea, and sometimes also hematuria.

Hochstetter saw the first case of this anomaly on autopsy in 1893 (2). Since that time just fewer than 200 cases being reported worldwide and mostly in adults, It has a worldwide incidence of 0.06 to 0.17 percent (3) with a three to four times male predominance in autopsy studies (4).

The ureter passes behind the vena cava inferior leading to varying degrees of ureteral compression. There are clinical types: a common Type I with a low loop and kinking of the proximal ureter producing obstruction and a rare Type II with a high loop where there is no kinking and no obstruction (5).

Type I: The slightly commoner form has a moderate or severe hydronephrosis and an ‘S’ or ‘fishhook’ deformity of the ureter at the point of obstruction. They demonstrate that the point of obstruction is placed some distance from the lateral margin of the inferior vena cava.

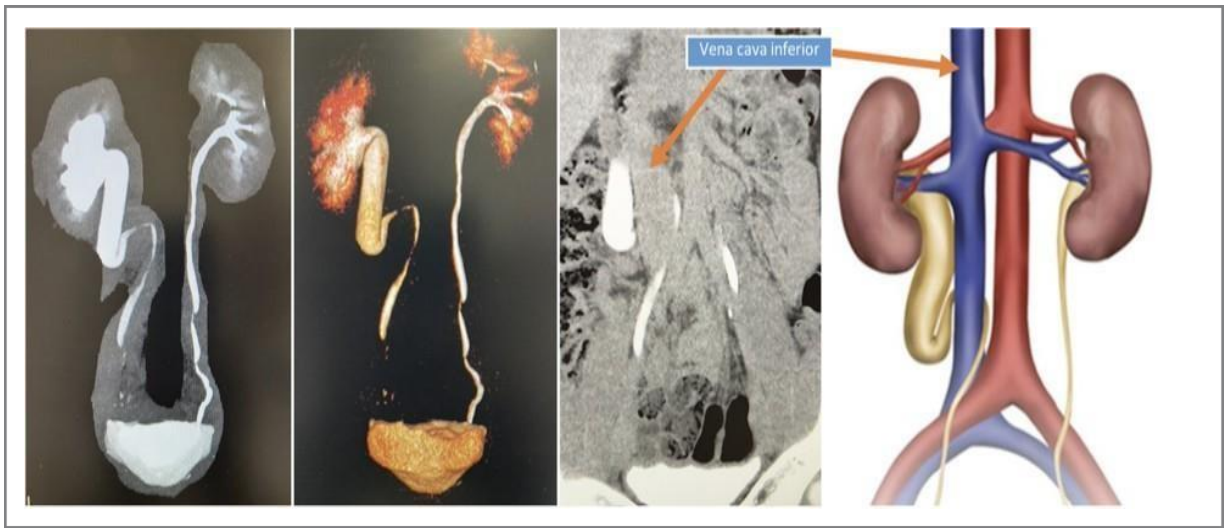
Type II: The second form has a mild hydronephrosis and a 'sickle-shaped' curve of the ureter at the point obstruction. The obstruction coincides with the lateral margin of the inferior vena cava in this type (6).

In some cases, the compression can result in gradual development of hydronephrosis that deteriorates the renal function. If progressive kidney damage occurs, early radiological diagnosis and surgical correction are necessary to salvage the remaining renal function.

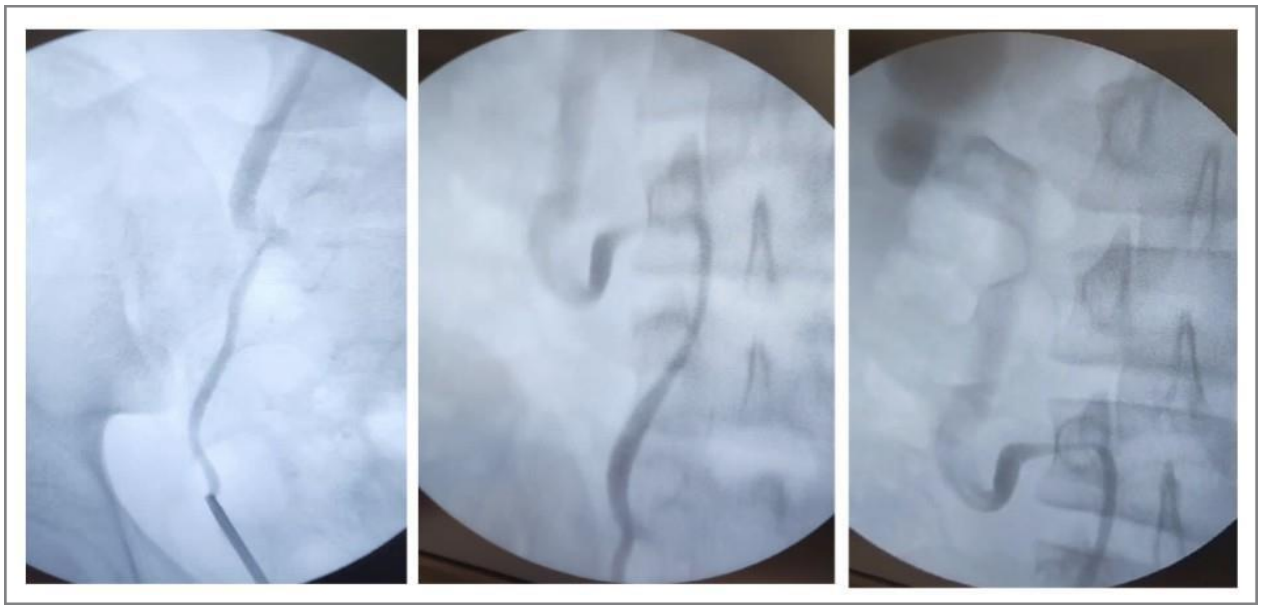
Clinical Case

A 15-year-old patient, accompanied by their parents, visited our hospital for the first time. They reported that the child had been experiencing irregular abdominal pain and vomiting several times a week for several years. Despite consulting numerous doctors who suggested allergies and stomach issues as potential causes, the prescribed medications only provided temporary relief. The parents noticed that the pain and daily vomiting episodes had worsened in recent months. Our pediatrician conducted various examinations, including an ultrasound the first the child had ever undergone. The ultrasound revealed a significant dilation of the right kidney's pelvis. I was referred to the case and conducted my own ultrasound examination, ruling out a typical renal pelvis stenosis due to the dilation of the proximal ureter as well.

To eliminate the possibility of a ureteral stone, I ordered a CT scan of the abdomen without contrast. Although this confirmed the absence of a stone, it revealed an unusual path of the right ureter. As a result, a follow-up CT scan with contrast was required. It showed right- sided- hydronephrosis and hydroureter because the right ureter showing Kinking and passing behind the inferior vena cava at the level of lower L3 vertebra. The Ureter exits medially between the vena cava and the aorta to return to its normal position. It led to the diagnosis of a rare condition: a retrocaval ureter.

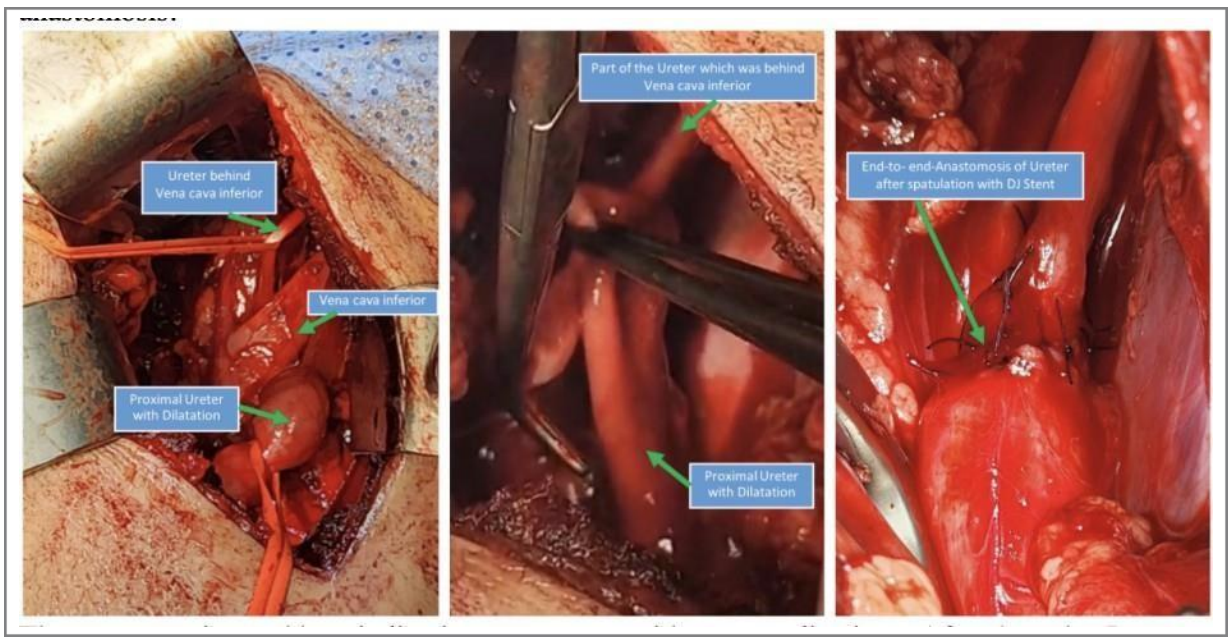


The distal ureter was not clear in the CT scan, because of this I performed a cystoscopy with retrograde Ureterography.

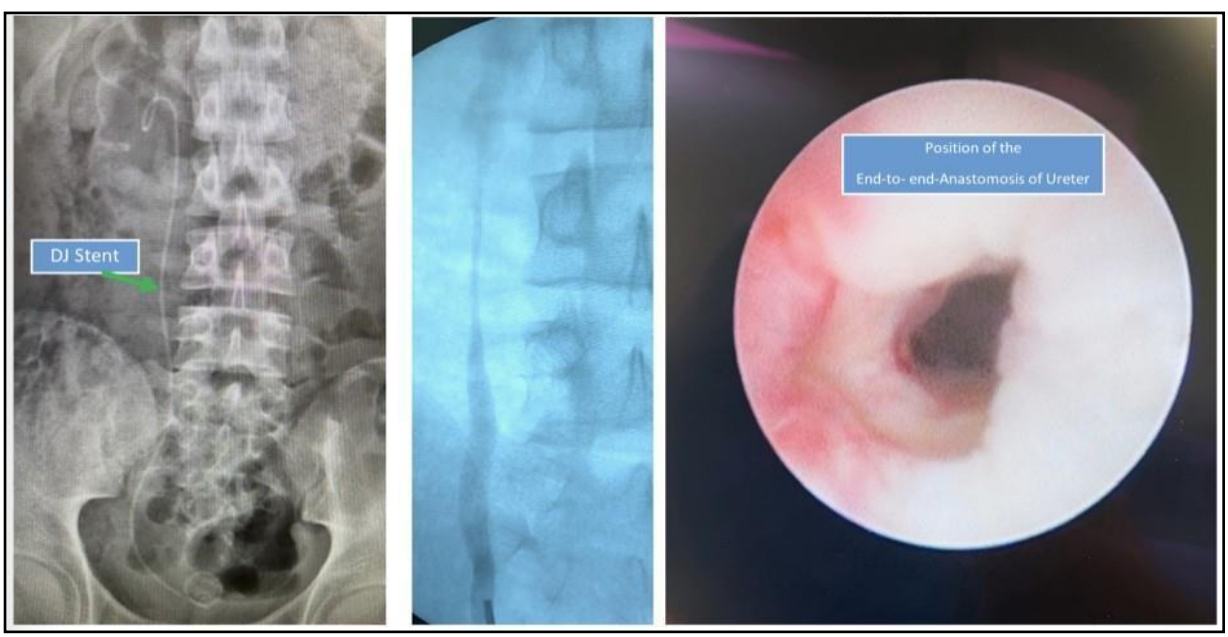


Next, I performed the operation through a right flank incision. I first exposed the ureter, then severed it, completely mobilized it, and redirected it from behind the inferior Vena Cava.

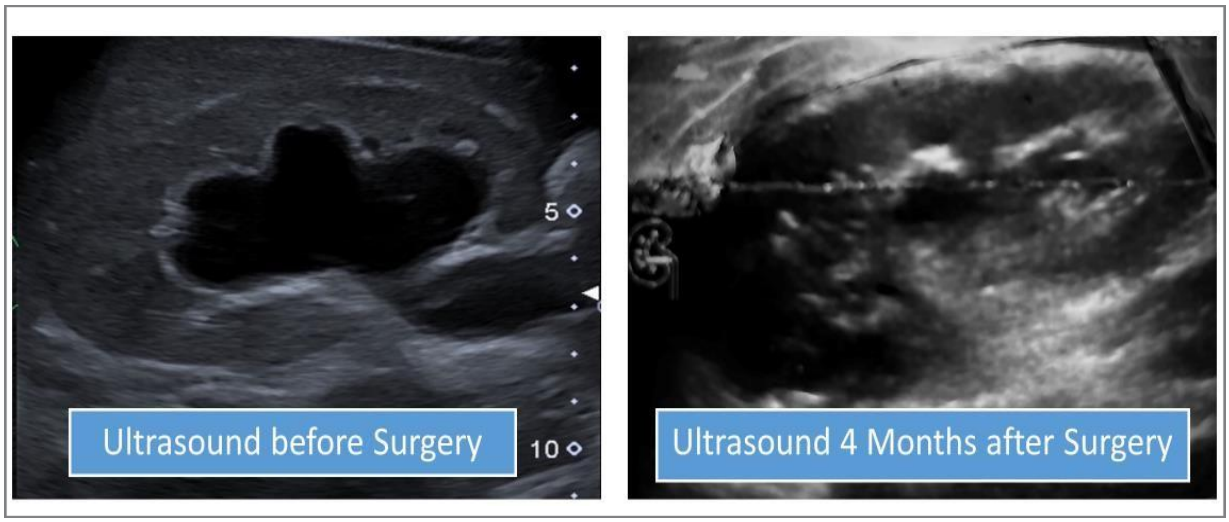
After spatulation of both ureter ends and insertion of a DJ stent, I completed an end-to-end anastomosis.



The postoperative course and hospital stay proceeded without complications. After four weeks, I removed the DJ stent and performed ureteroscopy with Ureterography.



Patient came to me with his parents 4 months post-surgery for Follow up. He is in very good condition. They informed me that since the operation, the boy has stopped complaining about abdominal pain and vomiting. Now he can eat everything without to think about pain or Nausea. After surgery he has gained 6 kilograms. I performed Ultrasound of right Kidney which showed normal situation with no more Hydronephrosis.



Discussion:

The child experienced years of abdominal pain and irregular vomiting. Despite numerous consultations with doctors, none performed an ultrasound examination. Sometimes, underlying diseases can be masked by common symptoms. Therefore, it is crucial to conduct non-invasive ultrasound examinations in certain cases, including in children. Many common anomalies or congenital diseases unfortunately remain undiagnosed for a long time due to the lack of ultrasound examination.

References

1. Heslin JE, Mamonas C. Retrocaval ureter: Report of four cases and review of literature. J Urol. 1951;65:212–222. [PubMed]
2. 8. Olson RO, Austen G., Jr N Engl J Med. 1950;242:963–968. [PubMed]
3. Retrocaval Ureter: a meta-analysis of prevalence, https://doi.org/10.1007/s00276-019-02269-w (Pubmed)
4. Ahmed, Muhammed; variable presentation of retrocaval Ureter, Apr-Jun 2017 doi: 10.4103/npmj.npmj_48_17
5. Kenawi MM, Williams DI. Circumcaval ureter: a report of 4 cases in children with a review of the literature and a new classification. Br J Urol. 1976;48:183–192. [PubMed]
6. Circumcaval Ureter. New Classification, clinical radiology, DOI : https://doi.org/10.1016/S0009-9260(69)80166-2.