



## VARIED PRESENTATIONS OF RETROCAVAL URETER

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### ARTICLE INFO

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### ABSTRACT

**Introduction:** Retrocavalureter is a rare congenital venous anomaly in which ureter courses posterior to IVC. Incidence of Retrocavalureter - 1 in 1100. There is a 2.8-fold male predominance. This vascular anomaly is not always associated with ureteral obstruction and degree of obstruction depends on type of Retrocaval ureter. Surgical correction remains the method of choice in management of retrocaval ureter.

**objective:** To report the clinical presentation, radiological features and treatment of ten cases of retrocaval ureter managed in our institution from 2014-18.

**Materials and methods:** Imaging done in all the cases-IVU or retrograde pyelogram had been used for confirming the diagnosis. Hemogram, renal function test, urine culture, serology, ECG, Chest Xray were done. Out of the ten patients 5 patients were symptomatic with right loin pain at the time of presentation and was investigated with renal function test and CT KUB and 2 patients were found to have secondary calculus and underwent surgery.

2 patient had nonspecific diffuse abdominal pain. On imaging found to be retro caval ureter. One patient had right side abdominal pain associated with cholelithiasis and liver function test is done apart from urology investigations. 2 patients were asymptomatic and routine USG found the disease.

**Results:** All 10 patients were male. Clinical presentation-Right loin pain(5/10) Ureteric calculus(2/10) Anuria (1/10) Urosepsis(1/10) Open Ureteroureterostomy were performed with resection of the stenotic segment of the ureter in all 10 cases. All of them underwent intraoperative ureteral stent (double J stent) insertion. One patient underwent cholecystectomy in the same sitting. One patient underwent URSL on the opposite side. One patient underwent right PCN as urinary diversion for sepsis. All of them had uneventful postoperative period. Ureteral stents were removed about 6-8 weeks later. Postoperatively loin pain and hydronephrosis were improved in all cases.

**Conclusion:** An accurate pre operative diagnosis of Retrocaval ureter can be achieved by imaging studies. The most common presentation is right loin pain. Surgical treatment needed for symptomatic patients. Before definitive surgery associated renal function compromise, urinary infection should be addressed by appropriate methods like PCN, DJ stenting, antibiotics.

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### INTRODUCTION

Retrocaval ureter also referred to as circumcaval ureter or preureteral vena cava is a rare congenital anomaly with the ureters passing posterior to the inferior vena cava. The ureter classically course medially behind the inferior vena cava(2) winding around it and then passes laterally in front of it to then course distally to the bladder. Incidence of Retrocavalureter - 1 in 1000(5). There is a 2.8-fold male predominance. Though it is a congenital anomaly, patients do not normally present with symptoms until the 3<sup>rd</sup> and 4<sup>th</sup> decades of life, from a resulting hydronephrosis.

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The hydronephrosis may be due to kinking of the ureter, a ureteric segment that is adynamic or compression against the psoas muscle. It was initially considered as aberration in ureteric development; however current studies in embryology have led to it being considered as an aberration in the development of the inferior vena cava. Retrocaval ureters are classified into two clinical types. Type 1 is commonest and has moderate to severe hydronephrosis in about 50% of cases with extreme medial deviation of middle ureteric segment and the ureter assuming an S or 'fish hook' deformity. Type 2 has less medial deviation of the ureter with mild or no associated hydronephrosis and forms about 10% of cases.(8).

The onset of symptoms is usually in the 4th decade and males predominate by a ratio of 3:1. The manifestation is usually with right flank pain, though haematuria, calculus, urinary

infection or recurrent pyelonephritis may also be the presenting evidence. Open surgical ureteroureterostomy is considered as a gold standard for surgical intervention. Division of dilated pelvis with transposition and reanastomosis, initially described by Harril in 1940(10)

**objective**

To report the clinical presentation, radiological features and treatment of ten cases of retrocaval ureter managed in our institution from 2014-18.

**MATERIALS AND METHODS**

Imaging done in all the cases-IVU or retrograde pyelogram (Figure 1 & 2) had been used for confirming the diagnosis. hemogram,renal function test,urine culture, serology, ECG, Chest Xray were done. out of the ten patients 5 patients were symptomatic with right loin pain at the time of presentation and was investigated with renal function test and CT KUB (Figure 4)and 2 patients were found to have secondary calculus and underwent surgery. 2 patient had nonspecific diffuse abdominal pain.on imaging found to be retro caval ureter.One patient had right side abdominal pain associated with cholelithiasis and liverfuction test is done apart from urology investigations.2 patients were asymptomatic and routine USG found the disease.

**RESULTS**

All 10 patients were male.Clinical presentation-Right loin pain(5/10)Ureteric calculus(2/10)Anuria (1/10)Urosepsis(1/10) Open Ureteroureterostomy (Figure 3) were performed with resection of the stenotic segment of the ureter in all 10 cases . All of them underwent intraoperativeureteralstent (double J stent) insertion.One patient underwent cholecystectomy in the same sitting .One patient underwent URSL on the opposite sideOne patient underwent right PCN as urinary diversion for sepsis All of them had uneventful postoperative period. Ureteralstents were removed about 6-8 weeks later .Postoperatively loin pain and hydronephrosis were improved in all cases.

**CONCLUSION**

An accurate pre operative diagnosis of Retrocaval ureter can be achieved by imaging studies. The most common presentation is right loin pain. Surgical treatment needed for symptomatic patients.before definitive surgery associated renal function compromise,urinary infection should be addressed by appropriate methods like PCN,DJ stenting,antibiotics. Acknowledgement –SRM management and staffs.

**Table 1** clinical features of 10 retrocaval ureter cases

Sl.no.	Age/ Sex	Symptoms	Imaging studies	Type	Treatment
1	45/m	Right loin pain	Ivu,rgp	1	Open uretero- ureterostomy
2	52/m	Right loin pain	Rgp,ct	1	Open uretero- ureterostomy with open cholecystectomy
3	68/m	Right loin pain	Ivu,rgp	1	Open uretero- ureterostomy
4	42/m	Right loin pain+ureteric calculus	Ivu,rgp.	1	Open uretero- ureterostomy
5	27/m	Bilateral loin pain with anuria	Ct,rgp	1	Open uretero- ureterostomy with lt ursl
6	75/m	Right loin pain+ureteric calculus with sepsis	Ct,mru,rgp	1	Rt pcn followed by open ureteroureterostomy
7	26/m	Right loin pain	Ct, ivu	1	Ureteroureterostomy
8	35/f	Right loin pain	Ivu, rgp	1	Ureteroureterostomy
9	38/m	Right loin pain	Ivu, rgp	1	Ureteroureterostomy
10	56/m	Right loin pain	Ivu, rgp	1	Ureteroureterostomy



**Figure 1** Calculus in Retrocaval Ureter



**Figure 2** IVU showing Retrocaval Ureter

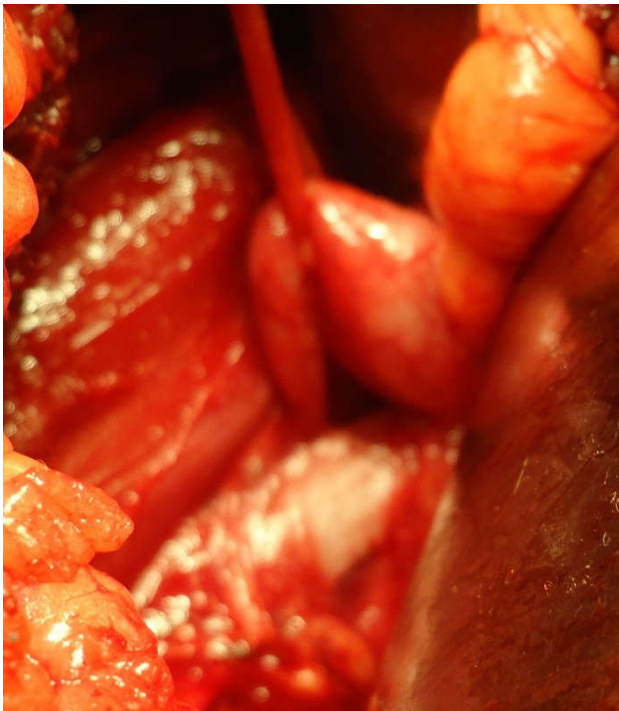


Figure 3 Intra Operative Picture demonstrating Retrocaval Ureter



Figure 4 CT Urogram in Retrocaval Ureter

## References

1. Chuang VP, Mena CE, Hoskins PA. Congenital anomalies of the inferior vena cava. Review of embryogenesis and presentation of a simplified classification. *Br J Radiol.* 1974;47:206–213. [PubMed] [Google Scholar]
2. Schlüssel RN, Retik AB. Preureteral Vena Cava. In: Kavoussi LR, Novick AC, Partin AW, Peters CA, editors. *Campbell-Walsh Urology.* 9th ed. Elsevier Saunders; 2007. pp. 3418–3420. [Google Scholar]
3. Lesma A, Bocciardi A, Rigatti P. Circumcaval Ureter: Embryology. *European Urology.* 2006; (supplements 5):444–448. [Google Scholar]
4. Fukuoka W, Fukushima N, Uekane K, Higurashi M. Retrocaval ureter with recurrent pyelonephritis. *Gynaecologic & Obstetric Investigation.* 1992;34:57–60. [PubMed] [Google Scholar] [Ref list]
5. Salonia A, Maccagnano C, Lesma A, Naspro R, Suardi N, Guazzoni G, Montorsi F, Rigatti P. Diagnosis and treatment of circumcaval ureter. *Eur Urol Suppl.* 2006;5:449–462. doi: 10.1016/j.eursup.2006.02.009. [CrossRef] [Google Scholar] [Ref list]
6. Salonia A, Maccagnano C, Lesma A, Naspro R, Suardi N, Guazzoni G, Montorsi F, Rigatti P. Diagnosis and treatment of circumcaval ureter. *Eur Urol Suppl.* 2006;5:449–462. doi: 10.1016/j.eursup.2006.02.009. [CrossRef] [Google Scholar] [Ref list]
7. Bissi A, Rigatti P (1977) L'uretere circumcavale. *Chir Arch Trim* 41
8. 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] [Google Scholar]
9. Bateson E, Atkinson D. Circumcaval ureter: a new classification. *Clin Radil.* 1969;20:173–177. [PubMed] [Google Scholar]
10. Harril HC. Retrocaval ureter. Report of a case with operative correction of the defect. *J Urol.* 1940;44:450–7. [Google Scholar] [Ref list]

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