

## Surgical management of ureterocele, experience at urology department in Chandka Medical College Larkana, Pakistan

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**Objective:** To assess the ureterocele management with highlighting the occasional occurrence of this condition in urologists and pediatric surgeons.

**Methodology:** We utilized a retrospective observational cross sectional study design, where the information was retrieved, included 70 patients from the hospital records. The exclusion criteria includes all the patients having any respiratory infection or cardiac disease, whereas all the patients who were admitted for surgical treatment of ureterocele were included in this study, mostly with repeated UTI not responding to antibiotics, severe LUTS, upper tract hydro nephrosis and urosepsis. Ureterocele were managed surgically and patients were kept on follow up 6 and 12 weeks in which ultrasound KUB was performed.

**Results:** Total 70 patients were included in our study from hospital records. The average age was  $29.5 \pm 10.3$  years (range 18-48). In 42(60%) of the patients, the presentation was flank pain and micturition pain. While 22 patients presented with flank pain along with painful urination. Almost 40(57.1%) were having lower urinary tract symptoms (LUTS). The other presenting symptoms were fever and hematuria in 40% and 30% of the patients, respectively.

**Conclusion:** Ureterocele is not uncommon and once diagnosed earlier it can be managed successfully without compromising renal functions. (Rawal Med J 202;45:802-805).

**Keywords:** Ureterocele, cystic dilatation, hematuria.

## INTRODUCTION

The distal ureter cystic dilatation is known as ureterocele. As per the published EU and US reports, the condition occurs in one out of 4000 children, and more in females up to 7 times than males and reported exclusively Caucasians.<sup>1,2</sup> Among non-Caucasians, it is rare and the real incidence among adults is not known. The etiology of ureterocele is debatable but most accepted as inherited. Majorly appears in children and linked to the congenital anomalies of upper tract such as duplex hoarding system also hereditary origin. It is said that the condition initiate from improper Chwelle's membrane closure.<sup>3,4</sup> Vesical wall inflammation and the stone passage are considered to be responsible for the ureterocele development.<sup>5-7</sup>

Stephens et al first classified it in 1954 as sphincteric, stenotic, sphincterostenotic and cecoureterocele.<sup>1,4</sup> Ureterocele is frequently

unilateral whereas the bilateral was observed in 10% of the cases.<sup>2,3</sup> The children frequently exhibit with intermittent urinary tract infection (UTI), thrive failure, incontinence, urinary tract calculus (UTC) and urethral prolapse with bladder vent hindrance.<sup>4,5</sup> Among the adults, frequently the single system ureterocele is observed and termed as adult ureterocele. The recurrent flank pain due to infection, obstruction or calculus occur in adults and the radiologic investigation is the only diagnostic strategy.<sup>2,8,9</sup> The current study aims to assess the ureterocele management also to highlighting the occasional occurrence of this condition in urologists and pediatric surgeons.

## METHODOLOGY

In this retrospective observational cross sectional study, information was retrieved on 70 patients from the hospital records of Department of urology, Chandka Medical College Larkana. Study duration

was of one year from January to December 2017. Exclusion criteria include all the patients having any respiratory or cardiac disease whereas all the patients who were admitted for surgical treatment of ureterocele were included in this study, mostly with repeated UTI not responding to antibiotics, severe LUTS, upper tract hydro nephrosis and urosepsis. The ethical approval for the study was taken from the hospital ethical committee.

Ureterocele were managed surgically and patients were kept on follow up 6 and 12 weeks in which ultrasound KUB was performed. Demographic, clinical and diagnostic findings were noted. The information obtained included age, sex, type and number of ureterocele, associated disease, type of surgical intervention, complications, and follow-up. **Statistical Analysis:** Statistical analysis was performed using SPSS version 20.  $P < 0.05$  was considered statistically significant in all inferential statistics.

## RESULTS

Out of 70 patients, 49 (70%) were females and 21 (30%) males. Mean age was  $29.5 \pm 10.3$  and range was 18-48 years. Out of the total patients 42(60%) presented with unilateral ureterocele while remaining 28(40%) had bilateral. All males had unilateral and females with bilateral and duplex system (Table 1). In 42(60%) patients, the presentation was flank pain and micturition pain. Almost 40(57.1%) had LUTS. The other presenting symptoms were fever and hematuria in 40% and 30% of the patients respectively. The associated pathologies are shown in Fig. 1.

Table. Summary of the ureterocele number and types.

Ureterocele Site	Ureterocele Type		Total
	Single System	Duplex System	
Right	25	0	25
Left	17	0	17
Bilateral	27	1	28
<b>Total</b>	69	01	70

Fig. 1. Associated pathologies.

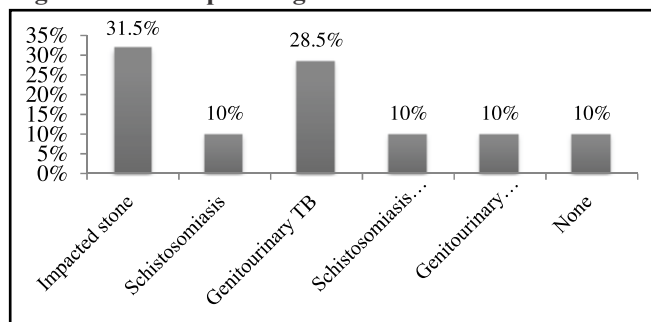
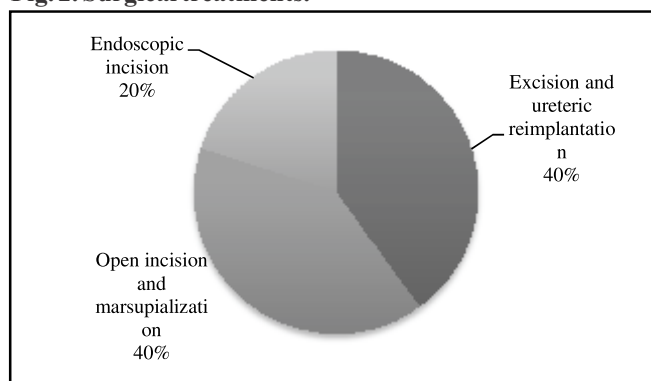


Fig. 2. Surgical treatments.



The 70% ureterocele treatment was primarily through the open method. Throughout the operative procedures, the entire ureteric openings were observed to be stenotic. Specific methods included elimination with ureteric re-implantation and the marsupialization incisions, in all patients double J stent was kept, which was removed postoperatively after six weeks. After surgery, no such major complications seen, in most of patients LUTS and transient hematuria resolved spontaneously (Fig. 2).

## DISCUSSION

This is the very first experience from Department of urology, Chandka Medical College. Most of them included the development of the distal ureter muscle abnormally, which outcomes in dilatation and membrane like layer. Certain other theories purposed that the dilatation is due to the abnormal and difficult passage of stone leading to its development.<sup>1-4</sup> Although, the incomplete suspension mechanism of the Chewelle membrane, is most acceptable that occurs before the 37th days gestation. This appears more ectopic and linked frequently with the duplex upper tract.<sup>3</sup>

Mostly it is unilateral and only 10% appeared bilaterally.<sup>4,9</sup> The aforementioned statement will likely to explain that why the current study patients are presented late in adulthood. Therefore, there was no suspected diagnosis erstwhile to the radiological examinations. The former appearance is not only the reason of rarity among the race, but also due to the adult patients having the condition that frequently occur only in early childhood.

In 1954 the Ericsson et al has categorized the ureteroceles as simple or ectopic type. This might be linked with the single or double systems. The first type is frequently correlated with the single system while the other ectopic type is linked to the duplex system.<sup>2</sup> Afterward, Stephens et al, portrayed the ureteroceles founded on their opening nature as: stenotic, sphincteric, sphincterostenotic and the ceco-ureterocele.<sup>1</sup> We observed in our study findings that 60% of our patients had unilateral ureterocele and 40% had bilateral. Therefore, above to 90% of the patients had single system ureterocele that is the typical "adult" type ureterocele. Aas and Chtourou et al had shown the similar pattern.<sup>2,9,18</sup>

Children frequently exhibit intermittent UTI, thrive failure, incontinence, urinary tract calculus (UTC) and urethral prolapse with bladder vent hindrance.<sup>4,5</sup>

Among adults, frequently the single system ureterocele is observed and termed as adult ureterocele. It is strongly associated to the schistosomiasis as reported by Umerah et al and Sinha et al.<sup>6,7</sup> We have reported in our study findings, the entire patients were assessed for genitourinary tuberculosis, and (40%) were reported positive, there ureterocoele were surgically corrected and then referred to Tuberculosis national program for proper management and at time of presentation there renal functional status were normal.

Other pathologies were squeezed stone in the ureterocele among almost half of the patients. The associated pathologies with high incidences in our study made a possible case for acquiring the origin of these ureteroceles. Moreover, in our study, the emptying cystourethrogram (VCUG) determined the size and location of the ureterocele as a stodgy defect into the ureters. The nuclear DMSA scans, the DTPA, or the MAG3 might validate the restrained

alterations in the renal function and presence or absence of hindrance.<sup>11,17,19</sup>

## CONCLUSION

Ureterocele is not uncommon and once diagnosed in earlier period then can be managed successfully without compromising renal functions.

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