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Case Report

Congenital Anterior Urethral Diverticulum: A Case Report

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ABSTRACT

Congenital anomalies of lower urinary tract are most common anomalies found in children, but congenital anterior urethral diverticulum is a very rare cause. Here we present 11 month old male child presented with soft cystic swelling in ventral side of penile shaft and underwent open diverticulectomy.

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INTRODUCTION

Congenital anterior urethral diverticulum (AUD) is a very rare condition in children. Though the congenital anomalies of the urogenital tract are the most common anomalies found in the fetus, neonates and infants, anterior urethral diverticulum is found to be rare entity.

It is classified into two types, saccular and globular variety. Saccular variety is found to be more common than globular.[1] It may be considered as a result of congenital anterior urethral valve (AUV). [2] The diverticula usually occur where there is a defect in the corpus spongiosum, leaving a thin-walled urethra.[3] Some author believes AUD and AUV as same entity while others believe these are two different diseases. The cause and effect relationship between anterior urethral diverticulum and anterior urethral valve has still been in debate. The diverticulum that is associated with AUV is not a true diverticulum because in AUD an acute angle is formed between the proximal part of dilated portion and the ventral floor whereas this acute angle is not seen in AUV.[4]

The diverticulum and valve cause obstruction of male urethra and patients present with dysuria, dribbling of urine, recurrent urinary tract infection, or fluctuant ventral penile swelling.[5] It commonly occur at penoscrotal junction while one third may occur at penile urethra.[6] Treatment depends upon size and degree of obstruction. Different surgical techniques are available which include endoscopic division of distal lip of diverticulum, excision of diverticulum with primary repair, marsupialization with staged urethroplasty or even suprapubic diversion followed by definitive repair. In this paper, we are presenting our experience of anterior urethral diverticulum and its management.

CASE REPORT

An 11month-male child presented with swelling over ventral side of distal penile shaft (fig. 1 and 2) and dribbling of urine. Swelling was about 1.5 X 1.5 cm soft, cystic, fluctuant and compressible. Swelling collapsed completely after manual pressure with urine coming out per urethra. Also complains of dribbling of urine

every time and continuous wet of his underwear. Complete pre-operative investigation was done. Blood counts and urine analysis was normal. Ultrasonography showed both kidneys are in normal size and shape and normal urinary bladder. Micturating cystourethrogram was done and showed the presence of wide-mouthed diverticulum in the distal penile urethra and no sign of vesico-ureteric reflux. (fig. 3)

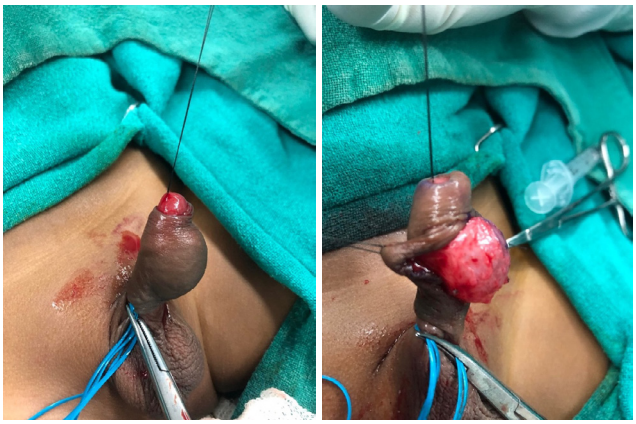

Figure 1and 2: swelling over distal shaft of penile urethra

Patient was operated under general anesthesia. The diverticulum was opened by longitudinal incision over the ventral aspect of penile shaft. Open diverticulectomy was done to excise the diverticulum. 8 Fr foleys catheterization was kept and primary repair of urethra done with continuous suturing vicryl 6-0 RB. (fig. 4)

Figure 3: Micturating cystourethrogram was done and showed the presence of wide-mouthed diverticulum in the distal penile urethra and no sign of vesico-ureteric reflux

Figure 4: Primary repair of urethra done with continuous suturing

The neourethra then covered by dartos flap. Skin edge cut and closure done with vicryl RB 6-0. Dressing done and opened on 5th postoperative day. Foleys was removed on 9th postoperative. Postoperatively urine flow was normal and the bulging over the ventral side of distal penile shaft also disappeared.

DISCUSSION

Congenital anterior urethral diverticulum mostly found at penoscrotal junction but in one third of cases may occur at anterior penile urethra. The embryology behind the development of anterior urethral diverticulum is still unknown. Different hypothesis is explained which include development defect of corpus spongiosum, cystic dilatation of urethral glands, and sequestration of an epithelial nest after closure of the urethral folds. With lack of corpus spongiosum a urethral dilatation in this region may develop into diverticulum.[7]

Diagnosis can be done by clinical examination, ultrasonography, retrograde urethrography, voiding cystourethrography. Cystourethroscopy is diagnostic as well as therapeutic. Treatment depends upon the size of the diverticulum and degree of obstruction. In case of small, well- supported diverticula transurethral resection with pediatric resectoscope is the treatment of choice.[8] However, in case of large diverticula open diverticulectomy and primary repair is recommended.[9] Most common complications in open approach is fistula formation.

In some of the cases, Sachse knife showed a successful treatment. Some authors advised for plication of reductant diverticular

wall.[10] And in cases where there are back pressure changes of upper tracts with deranged renal function, urinary diversion either by marsupialization of diverticulum or suprapubic cystostomy/ vesicostomy is done.[11] In 2011, Y.S Kadian published a case report using a triangular flap fitted into distal lip and double breasting of the urethral suture line.[12] Contrary to it, in our case open diverticulectomy and primary closure done and dartos flap was kept and showed good result.

CONCLUSIONS

Anterior urethral diverticulum in pediatric age group causing lower urinary tract obstruction is not commonly seen. With the help of radiological studies, such as retrograde urethrogram and micturating cystourethrogram, diagnosis is being easier. Treatment depends upon size and surgeon preferences. However, in large diverticulum open diverticulectomy and primary repair are recommended.

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