Primary anterior urethral diverticulum

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ABSTRACT

Congenital diverticulum of the anterior urethra in male is uncommon and typically occurs at the penoscrotal junction. This is a report of a large primary diverticulum in the anterior urethra in a 4-year-old male child who was successfully treated with diverticulectomy and urethroplasty.

KEY WORDS: Anterior urethral valves, obstruction of lower urinary tract, urethral diverticulum, urethroplasty

INTRODUCTION

Bladder neck and posterior urethra are the traditional sites for the obstructive pathology of the lower urinary tract in children. Valves and diverticula of the anterior urethra are rare causes of obstructions to the urinary tract and the terms have been intermittently used synonymously in literature. The largest series reported in literature is of 260 cases of anterior urethral valves and diverticula reviewed over 20 years. The obstruction by anterior urethral diverticulum is first described by 1906 by Watts. We feel that there is a need to differentiate the pure (primary) diverticulum whose distal lip may cause an obstruction to the urinary stream from the diverticulum which is secondarily formed due to anterior urethral valves as treatment differs for both conditions.

CASE REPORT

A 4-year-old male child presented with a large swelling on the ventral surface of penis, inability to pass urine voluntarily and dribbling of urine since 3 years. However, he could pass urine when he used to apply pressure on the swelling. Over the years the size of the swelling had gradually increased. There was an associated history of intermittent fever. On general examination, he was well nourished and normotensive. Local examination of the perineum and the external genitalia revealed a large cystic swelling on ventral aspect of penis distal to the penoscrotal junction. On applying pressure on the swelling, urine was seen dribbling easily from the external meatus. The swelling was transilluminant. Both testicles and spermatic cords were normal. On abdominal examination, bladder was distended and palpable.

Urine routine and microscopic examination showed 30-35 pus cells while culture showed growth of *Escherichia coli* sensitive to amikacin and ceftazidime. Renal function tests were normal. Ultrasonography revealed a cystic swelling on the ventral aspect of penis with a radio-opaque density within. Upper tracts were normal, bladder was distended, and significant post void residual urine was present. An MCU was attempted but the patient did not cooperate. Retrograde urethrogram was done under antibiotic cover that showed a contrast filled oval outpouching of the ventral aspect of the anterior urethra. The rest of the urethra and bladder was normal. IVU showed a bifid left kidney without dilatation of the upper system.

Following investigations and prior to surgery an indwelling Foley’s catheter was inserted for drainage. Urethroscopy did not reveal any evidence of valves in the anterior urethra but the scope entered easily into the diverticulum that showed flakes and calculi. Though the diverticulum was large, the neck was relatively narrow and the calculi were probably resulting from stagnation of urine. The patient underwent an open diverticulectomy and urethroplasty with reinforcement of the corpus spongiosus. Post-operative period was uneventful. Catheter was removed after 10 days and patient could pass urine voluntarily with good stream without any leak. The histopathology report showed that the diverticulum was lined with normal
Diverticula of the male urethra can be classified as congenital or acquired. Congenital diverticula of the anterior urethra are very rare and typically occur at the penoscrotal junction. They are usually wide-mouthed and the distal edge may act as a valve that can obstruct the urine flow. There are very few cases of giant diverticulum which are reported. In our case, a giant primary diverticulum was present in the distal penile urethra.

Etiological factors in congenital diverticula have been summarized by Williams and Retik and include intrauterine distal urethral stenosis; lesser degree hypospadias or congenital cystic dilatation of the normal or accessory periurethral glands.

These anomalies are rare with no genetic pre-disposition. Anterior urethral valves associated with diverticulum are 10 times less common than posterior urethral valves while anterior urethral valves alone or diverticulum alone is 25-30% less frequent. The clinical presentation depends upon the age and degree of presentation. In neonatal age and infancy, symptoms related to urinary infection predominate while in older children voiding problems are the presenting complaints.

The anatomical interpretation of these lesions is variable; some authors combine all these abnormalities under the term ‘Diverticula’. Others only refer ‘Anterior urethral valves’ considering that diverticula and anterior urethral valves represent the same pathology. Nevertheless, many authors clearly distinguish valves and diverticula. Usually the diverticula are saccular, communicating with urethral lumen. They are present on the ventral aspect of the urethra and are variable in size. With the stagnation of urine, stones can be formed inside the diverticulum making it a unique presentation.

The diagnosis depends essentially on voiding cystourethrography, which must opacify the whole of the urethra. Retrograde urethrography is sometimes needed in case of a giant diverticulum. Though associated anomalies are rare, it is always advisable to look for them by doing additional investigations. Vesicourethral reflux, hydronephrosis, Prune-belly syndrome and posterior urethral valves have been reported in literature. Whereas, many authors have used the term anterior urethral valves and anterior urethral diverticula synonymously, we feel that there is a need to differentiate the two because of the fact that the treatment differs for both conditions. Whereas, primary valves can be successfully treated by transurethral endoscopic...
resection,[10] in case of primary diverticula, open resection with or without cystostomy is necessary.

REFERENCES

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