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Anterior urethral valve with anterior urethral diverticululum: A rare case report

Medical Science

KEYWORDS : Anterior urethral valves; Anterior urethral` diverticula; obstructive uropathy

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ABSTRACT

Introduction: Posterior urethral valves (PUV) are the commonest cause of obstructive uropathy in boys..We present our experience with a such case..

Patients and methods: A 8 months oid child was presented to us with swelling of penis which increased at the time of voiding and reduced after compression with dribbling of urine from the meatus . Hb and blood biochemistry were normal.USG KUB was normal. MCU shows penile urethral diverticulum with proximal anterior urethral dilatation . We did open diverticulectomy with r urethroplasty .

Results : The surgical outcome was successful with good stream of urine and resolution of ventral penile swelling and dribbling of urine.

Conclusions : AUV are uncommon causes of infravesical obstruction in males and its rarity warrants presentation. Open surgical excision is the treatment of choice for patients with a urethral diverticulum; The outcome is excellent with minimal morbidity and mortality.

INTRODUCTION

Congenital anterior urethral valves (AUV) are a rare condition and also a rare cause of obstructive uropathy in children (1).They are eight times less frequent than posterior urethral vales (PUV) in children (2). They may present as an isolated anomaly or in associated with proximal urethral diverticulum (3).The diverticulum associated with AUV is not a true diverticulum as in AUD an acute angle is formed between the proximal part of dilated portion and the ventral floor ; this acute angle is not present in AUV (4) . The diverticulum and valve causes obstruction of male urethra and patient complaints of lower tract symptoms or a fluctuant ventral penile swelling (5) .The treatment options include endoscopic division and excision of diverticulum with primary repair .We present our experience with a case of AUV with diverticulum who was managed by open diverticulectomy with urethroplasty .

PATIENTS AND METHODS

A 8 months old child was brought to us with swelling on the ventral surface of penis which increased at the time of voiding and reduced after compression with dribbling of urine from the meatus since birth . Hb and blood biochemistry were normal.USG KUB was normal. MCU showed diverticulum at penile urethra with dilated anterior urethra and no VUR (Fig.1) After routine work up we did open diverticulectomy with urethroplasty (Fig.2). Urethral stent was kept in for 7 days .

Figure 1. MCU showing diverticulum at penile urethra with dilated anterior urethra .

A

B

Figure 2. A. Penile diverticulectomy done after degloving the penis. B. Completed diverticulectomy and urethroplasty with urethral stent in place .

RESULTS

The surgical outcome was successful with good stream of urine and resolution of ventral penile swelling and dribbling of urine.The renal functions were normal with absence of PVR and the patients had no evidence of wound infection in postoperative period. Child also didnot develop any complication during 6 months of follow up with urine sterile.

DISCUSSION

Congenital anterior urethral valves are rare cause of obstructive uropathy in children (1). Associated malformations are rare, with an association between diverticula and prune belly syndrome .AUV are congenital mucosal folds that arise during voiding and flatten, causing obstruction that can be severe. The embryologically they may arise due to faulty union of the glandular and penile urethral segments, incomplete formation of the corpus spongiosum, and congenital cystic dilatation of the periurethral glands . The entry of urine distends the diverticulum during micturition, causing obstruction of the urethral lumen . AUV may be present anywhere in the anterior urethra with almost equal incidence at bulbar, peno-scotal and penile region. The clinical presentation of AUV is variable, depending on age of patient and the degree of obstruction. The common presenting complaints include recurrent UTI and lower tract obstructive symptoms (8). In the absence of diverticulum , the diagnosis may be difficult and delyed . In the pediatric age group, AUV may cause severe obstruction resulting in urethral diverticulum, megacystis, bladder rupture, renal failure and urinary ascites (9). In one-third of patients there is VUR, and in half of them there is bilateral hydroureteronephrosis (10). Four types of AUV have been described according to the severity of obstruction. The simplest form is seen in Type 1, to Type 4 obstruction which represents severe changes of the upper tract (3). VCUG is the most important imaging technique for the evaluation of urethral abnormalities. The urethra appears dilated proximal to the valve. VCUG also identifies reflux, an associated diverticulum or megacystis (6). Endoscopically AUV typically appears as a filmy, cusp-like thin membrane . Ultrasonography may suggest the diagnosis of AUV by urethral dilatation and the renal parenchyma abnormalities, especially the presence and intensity of renal dysplasia. Treatment options include transurethral endoscopic resection/ fulguration for isolated AUV . When associated diverticula are present the treatment depends on the size of the diverticulum and the degree of obstruction. Transurethral resection is the treatment of choice for small, well-supported diverticula (6). In large diverticula the surrounding supportive tissue is deficient and a poorly draining cavity is likely to be left after transurethral treatment, so open diverticulectomy and primary repair are recommended (7). The aims should be to entirely excise the diverticulum, re-establish the continuity of the urethra, and, if required, provide additional tissue to support the repair and prevent a fistula to the skin. We performed excision of diverticula and primary reconstruction in The complications of open repair are urinary extravasation, stricture and urethrocutaneous fistula, whereas cystoscopic ablation is associated with stricture and persistent urethral dilatation . Unlike boys with posterior urethral valves, the eventual outcome of AUV is good long-term follow up does not show any residual radiological dilatation and the incidence of chronic renal failure is less than 5% . We have followed our patients after 6 months, and the child is doing well with normal renal function .

CONCLUSION

AUV are uncommon causes of infravesical obstruction in males and its rarity warrants presentation. The diagnosis is easily established by VCUG and the severity is revealed by a sonogram.Open surgical excision is the treatment of choice for patients with a urethral diverticulum; cystoscopic fulguration is also feasible in selected patients.The outcome is excellent with minimal morbidity and mortality.

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