Case Report

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Missed diagnosis of anterior urethral valve complicated with a foreign body: A cause for concern

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ABSTRACT

Anterior urethral valve (AUV) is a long known but rare anomaly, which is occasionally encountered in boys with obstructive uropathy. We present a case of AUV with a diverticulum which was misdiagnosed at other center as neurogenic bladder resulting in chronic renal failure. The case was further complicated by breakage of tip of the catheter used for clean intermittent catheterization (CIC) in the diverticulum presenting as a foreign body in the urethra. This article highlights the frequently missed diagnosis of AUV by most practitioners wrongly labeling it as neurogenic bladder, leading to improper management and renal failure in young boys.

Key words: Anterior urethral valve, transurethral fulguration, urethral foreign body

INTRODUCTION

Urethral valves are a common cause of obstructive uropathy in boys. Other causes include bladder diverticulae, meatal stenosis, and urethral or bladder stones. Whereas posterior urethral valve (PUV) are more frequent, the obstructive effects of anterior urethral valve (AUV) can cause equal damage. Awareness can permit accurate diagnosis and early management as this condition can be missed. This article highlights a case of AUV which was mismanaged as a case of neurogenic bladder resulting in chronic renal failure and further complicated by breakage of tip of CIC catheter.

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CASE REPORT

An 11-year-old male was admitted with history of overflow incontinence and lower abdominal distention for the past 4 years. He occasionally had fever and left flank pain but no lower urinary tract symptoms or recurrent urinary tract infections. His urine was turbid and foul smelling. He was initially evaluated in a peripheral hospital and was diagnosed to have neurogenic bladder for which a urethral catheter was placed for a month. He was later advised to practice clean intermittent catheterization (CIC). He presented to us with history of breakage of the catheter tip while doing CIC. Examination findings were normal and there was no neurological deficit or spinal abnormalities. Blood investigations revealed blood urea of 118 mg% and creatinine of 3.2 mg%. Urine microcopy confirmed pyuria and culture grew proteus; 24-hour urinary creatinine clearance was 9.77 ml/min. Ultrasonography showed bilateral gross hydroureteronephrosis with thinning of cortex, thick-walled urinary bladder, and high postvoid residue. A voiding cystourethrogram (VCUG) revealed an open bladder neck with dilated prostatic and bulbar urethra with a sudden decrease in caliber at penobulbar junction. A diverticulum was seen in the distal bulb region with a foreign body inside it [Figure 1]. There was no vesicoureteric reflux. A renal dynamic scan with catheter *in situ* showed bilateral nonobstructive clearance with a differential function of 40% (right) and 60% (left). MRI spine was normal.

A cystopanendoscopy examination showed AUV extending from 3 to 9'o clock position in the penobulbar urethra along with a retained tip of catheter in the diverticulum proximal to the valve. Back pressure changes were noted in the bladder. The foreign body was removed and valve was fulgurated at the 6'o clock position during the cystoscopy [Figure 2].

Postoperatively, the catheter was removed on

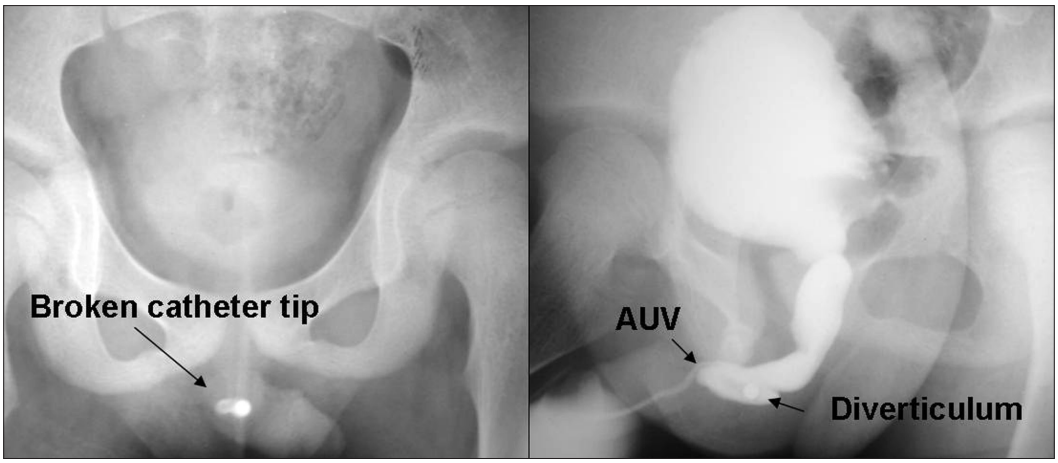


Figure 1: Voiding cystourethrogram films showing broken foreign body in a case with anterior urethral valve and diverticulum.

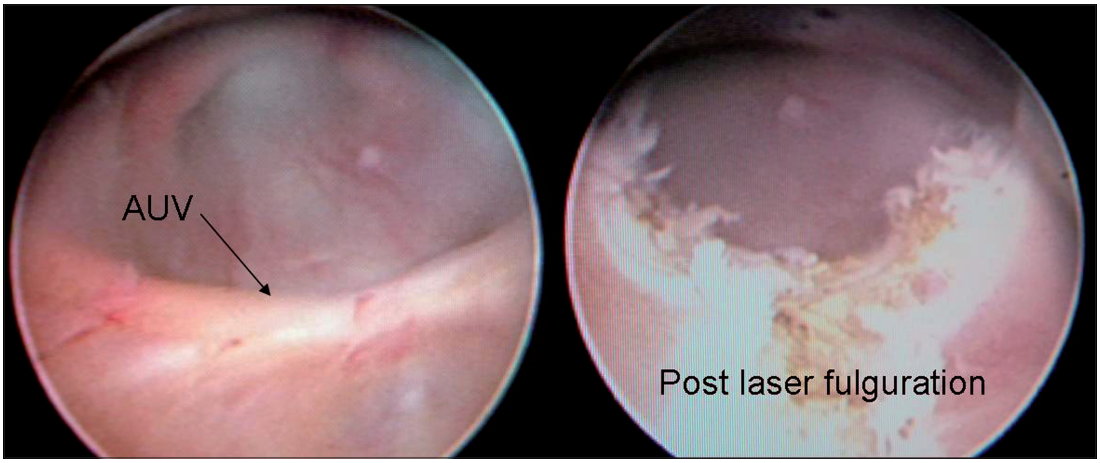


Figure 2: Urethroscopic view of anterior urethral valve at penobulbar junction before and after fulguration.

postoperative day 2 but he continued to have high postvoid residue due to detrusor dysfunction. The patient was discharged on CIC. At 1, 3, and 8 month follow–up, he remains on CIC and maintenance dialysis for renal failure.

DISCUSSION

Although PUVs are several times commoner than AUVs, the obstructive effects of AUVs are equally damaging. The male child may present with poor urinary stream, recurrent infections, or renal failure. Depending on the severity of anatomical obstruction, time for presentation varies from early at birth to later in childhood.[1,2] With routine antenatal screening, the diagnosis is increasingly being made in gestation period itself. However, in resource-poor areas, the diagnosis is frequently missed if index of suspicion is not kept high. Neurogenic bladder is a frequent misdiagnosis. Poor compliance with rigorous CIC protocols further adds to the detrimental effects of this otherwise easily correctable anomaly. It also provides a means to introduce infection in an obstructed system. Improper management thus results in renal failure, as happened in our case. Patient was already having advanced irreversible renal failure requiring twice weekly maintenance dialysis at presentation. Detrusor decompensation had also become irreversible with patient requiring CIC even after valve fulguration. This case highlights the dire need to reeducate our primary care practitioners and emphasize the importance of proper diagnosis of urethral valves. Overall fewer than 5% of the patients with AUV progress to renal failure, if managed properly.

AUV can be located anywhere in the anterior urethra – 40% in the bulbar urethra, 30% at the penoscrotal junction, and 30% in the penile urethra.[3] One-third of AUV cases have an associated diverticulum, which may cause swelling in the root of the penis during voiding. Compression of the swelling results in dribbling of

urine. Although the exact etiology is unclear, various theories exist including incomplete formation of ventral corpus spongiosum, congenital cystic dilation of the periurethral gland, an abortive attempt at urethral duplication, and a ruptured Cowper's duct cyst.[4] The diagnosis can be accurately made with oblique views of VCUG films. An early, precise diagnosis and awareness of the AUV in boys with obstructive symptoms can reduce incidence of advanced uropathies.[5] In our case, the patient was being managed as a case of neurogenic bladder. A high index of suspicion is essential to diagnose AUV at an early stage. This is particularly so when more common PUV are absent. It was only when the catheter tip broke that the patient was referred and the appropriate diagnosis was made. It also highlights the need for proper patient education as this patient was using the same catheter for CIC for long periods.

Different treatment modalities have been advocated for the management of this pathological entity. The management of urethral valves was initially open resection and reconstruction of the diverticulum. More recently, most surgeons have tended to treat them endoscopically with a hooked, single-wire, electrocautery "knife" or laser fulguration.[6]

Foreign bodies of the urethra are seen with iatrogenic injury, self-insertion, and rarely migration from adjacent sites. Treatment is focused on foreign body extraction, diagnosing complications, and avoiding compromise of erectile function. Aliabadi and colleagues reported that reasons for self-instrumentation in their population of 18 patients included autoeroticism in 33%, overt psychiatric causes in 11%, and to aid in voiding in 39%; in 17%, no definite reason could be ascertained.[7] Diagnosis can frequently be determined by clinical history and careful physical examination. Radiopaque foreign bodies can be localized with plain X-ray film examination supported by endoscopic examination, while excretory urogram or cystograms and ultrasound imaging may reveal radiolucent objects. The majority of cases can now be managed endoscopically.

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