Case Report

ANTERIOR URETHRAL VALVES: A RARE CAUSE OF URETHRAL OBSTRUCTION IN CHILDREN

Saqib Ismail[1], Anwarul-Haq[2], Abdul Rasheed[3], Mohammad Ali[4], Saifullah Khan[5], Iftikhar Ahmed Jan[6]

ABSTRACT

Anterior urethral valves are uncommon cause of urethral obstruction in children and diagnosis may be delayed due to rarity of condition. The symptoms mimic those of posterior urethral valves. We are reporting a four years old boy who presented with recurrent urinary tract infections, difficulty in micturition and dribbling of urine. Ultrasound showed bilateral hydronephrosis, hydrouerter and a large bladder with 100 ml of post voiding residual urine. Micturating cystourethrogram showed trabeculated bladder with dilated urethra to the navicular fossa. Cystoscopy revealed fibrous valves just proximal to the navicular fossa. Ablation of valves caused immediate relief of symptoms. Child remained symptoms free at six months follow-up.

KEY WORDS: Anterior urethral valves, Bladder out obstruction, Urinary tract infection.

Pak J Med Sci April - June 2008 (Part-I) Vol. 24 No. 2 311-313

INTRODUCTION

Anterior urethral valve (AUV) is a rare congenital anomaly of the male urethra. A weak urinary stream, dribbling and recurrent urinary tract infections are common presentations.[1] Ultrasonography shows features of distal urinary obstruction with hydonephrosis, hydroureters and distended bladder with incomplete emptying. Diagnosis is confirmed by voiding cystourethrogram (VCUG) which usually shows smooth dilatation of penile urethra up to the navicular fossa and by Cystoscopy.[2] Endoscopic or open ablation of the valves is curative in most cases.[3] AUV may be associated with other congenital anomalies of the renal system. A full evaluation of the urinary system is therefore essential.[4] We are reporting a case of a four years old child with AUV who presented with features of bladder outlet obstruction.

1. Saqib Ismail
2. Anwarul-Haq
3. Abdul Rasheed
4. Mohammad Ali
5. Saifullah Khan
6. Iftikhar Ahmed Jan
Dept. of Pediatric Surgery,
The Children's Hospital, PIMS.
Islamabad, Pakistan.

Correspondence:

Iftikhar Ahmad Jan
FCPS, FRCS Ed, FACS, FEBPS
Professor of Pediatric Surgery,
The Children's Hospital, PIMS.
Islamabad,
Pakistan.
Email: iftikarjan@gmail.com

* Received for Publication: September 10, 2007
* Revision Received: January 21, 2008
* Revision Accepted: January 25, 2008

CASE REPORT

A four years old boy presented with two years history of difficulty in passing urine, poor urinary stream, burning micturition and dribbling of urine. According to mother, she did not notice any problem until that age. Examination revealed normal looking male external genitalia and adequate urethral meatus. Large bladder was palpable in the suprapubic area. Urine analysis showed evidence of urinary

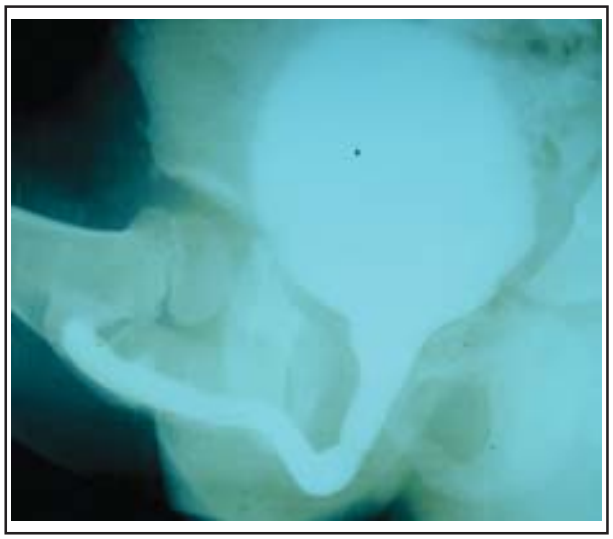

Fig-1: Micturating cystourethrography showing smooth dilation of urethra till naviclur fossa

tract infection. Renal functions were within normal limits. Renal ultrasound showed bilateral hydronephrosis and hydroureters, distended bladder with 100 ml post voidal residual volume of urine. VCUG revealed thickening of bladder wall with trabeculations and dilated urethra in its entire length with obstruction at the distal end of penile urethra. Cystoscopy revealed fibrous cusp like valves in anterior urethra about one centimeter proximal to navicular fossa. As appropriate hooks for fulguration were not available, open excision of the valve was performed by slitting the urethral meatus till the obstructing valves. Repair of the urethral tube was done using 6-0 polyglycolate sutures. Child had uneventful recovery in few days with complete resolution of symptoms on follow-up.

DISCUSSION

Anterior urethral valves (AUV) are a rare cause of urinary obstruction in male children.[1] Other common causes include posterior urethral valves, ureterocele, bladder diverticulae, meatal stenosis, urethral polyps and bladder stones. Anterior urethral valves are less frequent than posterior urethral valves and can be easily missed due to rarity of the condition.[2,3] The cause is uncertain, but they may occur due to an abortive attempt at urethral duplication.[4] Kusuda and Das postulated that valves may represent an early event in the development of urethral duplication.[5]

Another hypothesis is that these valves arise because of cystic dilatation of peri-urethral glands that join with the urethra resulting in the formation of valvular folds.[6] They may be located anywhere in the anterior urethra but are less common in distal urethra.[1] Our patient had valves in the most distal part of urethra at the less common location. Their configuration is cusp like or semilunar in approximately 70% and iris like in 30%.[7] In our patient cusp like valves were in accordance with the common type. Clinical presentation was similar to that of posterior urethral valves. There may be mild urethral dilatation without proximal dilatation of renal system or gross urethral dilatation with bilateral hydronephrosis, hydroureter and renal insufficiency in severe cases. The symptoms depend mainly on the age of presentation and the degree of obstruction.[4] Antenatal diagnosis is possible in severe cases.

In developing countries AUV usually present late with symptoms of recurrent urinary tract infection and obstructive uropathy. Urethral diverticulum may be present with AUV and in these cases a swelling appears during voiding. This has to be differentiated from congenital megalourethra where there is loss of supporting tissue around the urethra and dilation is non obstructive. Renal failure is seen in less than 5% patients and full renal assessment is necessary to identify cases with renal failure.

Ultrasonography will suggest features of bladder outlet obstruction, but the diagnosis is confirmed by VCUG. Cystoscopy is necessary for full evaluation of the urethra and nature of valves. The aim of management is to achieve optimal valve ablation and free urinary flow. Cystoscopic valve ablation may be achieved using electro-resection or laser ablasion.[4,8] If facilities for endoscopic ablation are not available, open valve resection is equally good. Other options are vesicostomy in infants with severe vesico-ureteric reflux, urethroplasty in

cases with thin urethra and diverticulectomy in those with associated urethral diverticulum.[9] Outcome in most children is excellent with immediate relief of symptoms. Early diagnosis can prevent renal damage in many patients.

REFERENCES

1. Naradimhan KL, Choudhary SK, Kaur B. Anterior urethral valves. Indian Pediatrics 2005;42:708-10.
2. Kolte SP, Joharpurkar SR. Anterior urethral valves-a rare cause of urethral obstruction. Indian J Pediatr 2001;68:83-5.
3. Paulhac P, Fourcade DL, Lesaux N, Alain JL, Colombeau P. Anterior urethral valves and diverticula. BJU Int 2003;92:506-9.
4. Mali VP, Prabhakaran K, Loh DS. Anterior urethral valves. Asian J Surg 2006;29:165-9
5. Kusuda L, Das S. Anterior urethral valve: A case report. Scan J Urol Nephrol 1989;23:231-3.
6. Kajiwara M, Inoue K, Kato M, Usui A, Matsubara A, Usui T. Anterior urethral valves in children: A possible association between anterior urethral valves and Cowper's duct cyst. Int J Urol 2007;14:156-60.
7. Wei-Feng Chen, Song-chei Huang, Tsan-Jung Yu, Yu-Fan Cheng. Anterior urethral Valve- and unusual cause of urethral obstruction. Pediatr Surg Int 1995;10:501-3.
8. Al-Busaidy SS, Prem AR, Medhat M, Al-Bulushi YH. Holmium laser ablation of anterior urethral valves: case report. J Endourol 2005;9:1210-11.
9. Van Savage JG, Khoury AE, Mclorie GA, Bagli DJ. An algorithm for the management of anterior urethral valves. J Urol 1977;58:1030-2.