
Case Report

Posterior Urethral Valve in a Child Presenting as Recurrent Epididymo-Orchitis

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Epididymo-orchitis is an uncommon complication of posterior urethral valve. A four-year-old boy was admitted because of right-sided epididymo-orchitis. Scintigraphy of the scrotum showed increased uptake of radiotracer on the right side. The posterior urethral valve was disclosed by voiding cystourethrography. Ablation of the valve and antibiotic therapy made the patient free of symptoms.

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Introduction

Acute scrotum in children is an important clinical condition with different causes. However, the true incidence of possible causes is not well-known.¹ Some of its causes require immediate corrective surgery while others may need only reassurance.

A high incidence of underlying urinary tract anomalies was reported in children with epididymo-orchitis (EO).¹ Various congenital or acquired urologic pathologies may predispose patients to develop urine reflux into the vas deferens.² Herein, we presented a rare case of recurrent EO due to posterior urethral valve (PUV) who was successfully treated by ablation of the PUV.

Case Report

A four-year-old boy was admitted with pain and

swelling of the right scrotum since two weeks prior to admission. His mother reported that there had been two previous attacks during the last year which partially responded to antibiotic (cephalexin) therapy. The patient had a history of urinary tract infection when he was three years old.

On physical examination, his right hemiscrotum was edematous and hyperemic; the right testis was tender and firm on palpation. Ultrasound of the kidney was normal. Color Doppler ultrasound of the scrotal structures showed increased thickness of the scrotal skin, size of the epididymis, blood flow to the right epididymis and testis, with decreased testicular echogenicity.

Scintigraphy of the scrotum revealed a markedly increased uptake of radiotracer on the right side; the left structures were normal.

Voiding cystourethrography (VCUG) showed dilation of the prostatic urethra suggesting of PUV. Kidney, ureter, and bladder (KUB)-X-ray, intraventricular pressure (IVP), and Dimercaptosuccinic acid (DMSA) were reported normal (Figure 1).

On urethroscopy, while the urethral diameter appeared normal, a significant membranous posterior valve with dilatation of the ejaculatory orifices in verumontanum was observed. The bladder mucosa was severely trab-

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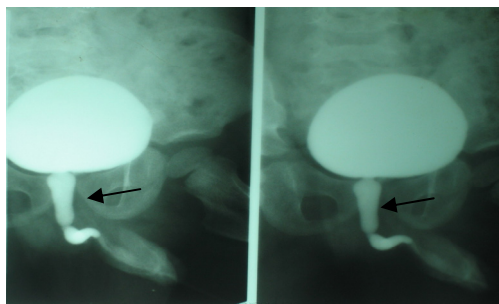


Figure 1. Voiding cysto-urethrography showing dilated prostatic urethra.

eculated but the orifices of ureters were normal in shape (Figure 2).

Ablation of PUV was performed. Within 10 days of antibiotic therapy, the scrotal swelling and pain subsided. The patient was discharged without urinary symptoms. He has been free of recurrence during a two-year follow-up. Eight months after valve ablation, VCUG was normal (Figure 3).

Discussion

Here, we reported on a case of recurrent EO due to PUV. Endoscopic ablation of the urethral valve improved voiding function and prevented relapse. The true cause of acute scrotal conditions is difficult to determine, as the diagnosis based on clinical examination or investigation results may not be accurate.^{1,3,4} Major causes of acute scrotal pain in children include testicular torsion (TT), and torsion of testicular appendages in 46% of cases, and epididymitis in author 35%.¹ Causes of painless scrotal swelling include hydrocele, nonincarcerated inguinal hernia, varicocele, spermatocele, and nephrotic syndrome.

Testicular torsion is one of the most dramatic



Figure 3. VCUG 8 months after valve ablation.

and potentially the most serious acute processes affecting the scrotal contents.^{5,6} The estimated incidence is one in 4000 in males younger than 25 years.⁷ It has two peaks in incidence. It is rare in neonates and common in puberty and may be presented intermittently.⁷ The diagnosis of TT can be made clinically and color Doppler ultrasound or nuclear scan of the scrotum.⁸

Torsion of the testicular appendage (TAT) causes a sudden pain which occurs more often in the groin or lower abdomen while the testicle is usually nontender; nonetheless, a tender mass may be palpable at the superior or inferior pole.⁵

Imaging studies may give a falsely high incidence of EO, as TAT may be incorrectly diagnosed as EO.^{4,9,10} These boys may be treated with antibiotics and subjected to further unnecessary investigations of urinary tract.^{1,11} EO is thought to be uncommon, but a high incidence of urinary tract anomalies is reported in children with



Figure 2. a) Endoscopic view of ejaculatory ducts, b) Endoscopic view of posterior urethral valve.

this problem.

Epididymitis is due to microbial agents including Chlamydia, *N. gonorrhoea*, *E. coli*, and viruses.¹² Noninfectious epididymitis might also be due to reflux of sterile urine through the ejaculatory ducts and vas deferens into the epididymis producing chemical irritation and obstruction.⁴ In contrast to TT, patient with epididymitis usually have a normal cremasteric reflex.^{5,13} All boys with EO should also be treated and investigated as those with urinary tract infection. Antibiotics should be commenced and renal ultrasound performed. Prophylactic antibiotics should be continued and cystography should be reserved for those with positive urine or scrotal cultures, for infants, for patients with recurrent attacks, and for those with abnormal ultrasound findings.¹⁴

There is also a report describing the presence of a calculus in the seminal vesicle associated with recurrent EO.¹⁵ Another report described imperforate anus with solitary kidney, ectopic ureter, PUV, and incomplete duplicate urethra. Elevated urethral pressure caused by PUV was considered as a predisposing factor for development of genitourinary anomalies leading to EO. Endoscopic ablation of the urethral valve was effective in improving voiding functions and in preventing recurrence.¹⁶

In summary, EO is one of the main causes of acute scrotum in children and usually presents as a complication of urinary tract infection. Sexually transmitted and systemic infections are other causes of EO. Recurrent EO is a rare condition in children. Because it may be seen with different anatomic malformations of the urinary system, it is recommended to perform full imaging studies of the lower and upper urinary systems in a child with a diagnosis of recurrent EO.

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