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Case Report

Urethral Diverticulum: Case Series

Manjeet Kumar[1]*, Kalpesh Mahesh Parmar[2], Kailash Barwal[1], Girish Kumar[1], Pamposh Raina[1], Kalpana Sharma[3]

[1]*Department of Urology, IGMC, Shimla, HP, India*

[2]*Assistant Professor, Department of Urology, PGIMER, Chandigarh, India*

[3]*Medical Officer, CH, Theog, Shimla, HP, India*

***Corresponding Author**: Manjeet Kumar, Department of Urology, IGMC, Shimla, HP, India.

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Abstract

Diverticula of the male penile urethra are rare clinical entities. Urethral diverticula in males may be associated with trauma, infection, impacted calculi or stricture disease. The management of urethral diverticula depends upon symptoms, size, and location. The management of diverticula should aim to minimize the complications of surgery. We present case series of 2 cases of urethral diverticulum managed at our institute.

Keywords: *Urethral Diverticulum; Trauma; Infection*

Introduction

Urethral diverticulum is a localized saccular dilatation of the urethra with a communication to the true urethral lumen. Urethral diverticula are rare clinical entities in the male population and can be classified as either congenital or acquired. Acquired urethral diverticula are far more common than those that develop congenitally, accounting for 67% - 90% of all urethral diverticula. Urethral diverticula in males may be associated with trauma, infection, impacted calculi or stricture disease. Urethral diverticula have also been recognized as a complication resulting after urethroplasty, hypospadias repair, long-term indwelling catheter use in spinal cord injury patients [1,2].

We present 2 cases of urethral diverticulum managed in our institute.

Cases Summary

Case 1

A 35 years patient presented with difficulty in voiding, post-micturition dribble, recurrent UTI. The patient had a history of preputial flap urethroplasty 15 years back done for long segment urethral stricture. Retrograde urethrogram was suggestive of urethral diverticulum (Figure 1). The patient was taken for cystoscopy. The patient had normal distal penile urethra till penobulbar junction, after that a large cavity was seen (Figure 2). At proximal anastomosis, site narrowing was seen. Optic internal urethrotomy was done at proximal narrowing site. The patients symptoms improved and he was kept on follow up.

Figure 1: *Posteior urethral diverticula.*

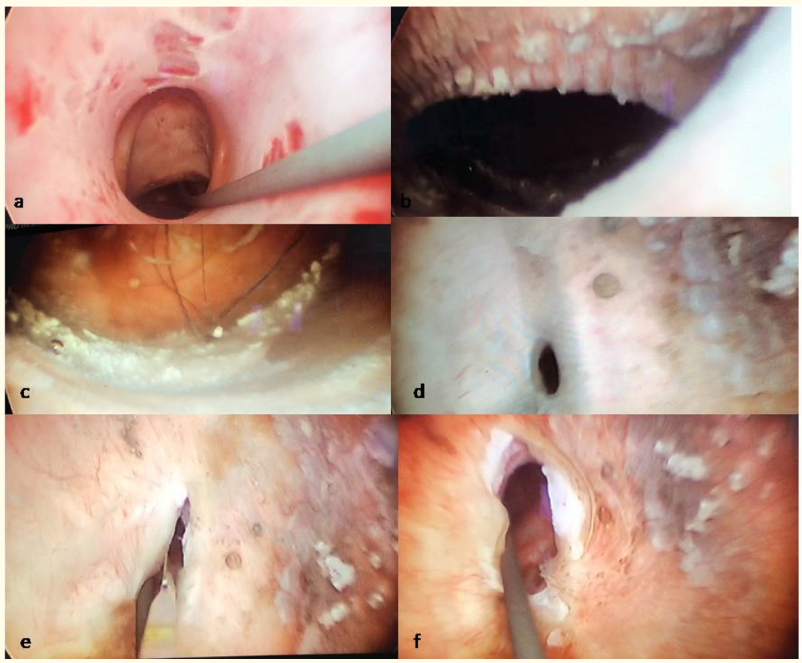

Figure 2: *Endoscopic treatment of narrowing in diverticula (a-f). a. endoscopic view of penile urethra, b-e. Urethral diverticula located at proximal penobulbar to bulbomembranous urethra. Diverticula having hair and narrowing at proximal end. f Endoincision with cold knife was given to relieve proximal obstruction.*

Case 2

A 40 years patient of bulbar urethral stricture presented with recurrent Urinary tract infection. He had history of optic internal urethrotomy done for bulbar urethral stricture (Figure 3). On evaluation found to have bulbar urethral diverticulum. In view of minimum symptoms and the patient was kept on follow up.

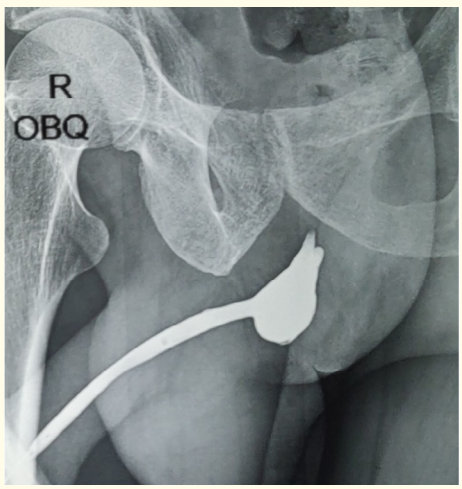

Figure 3: *Bulbar urethral diverticula developed after OIU.*

Discussion

Urethral diverticula of the male are uncommon, and the management has not been extensively described. A congenital diverticulum is a transitional cell epithelium-lined pouch that is the result of either distension of a segment of the urethra by hydraulic force of voiding

stream or the attachment of a structure to the urethra by a narrow. Congenital urethral diverticula typically occur in the anterior urethra and are lined by urethral epithelium and walls containing muscle fibers. In contrast, acquired diverticula may occur in any portion of the urethra and are lined by granulation tissue but lack epithelium or muscle fibres. Acquired Urethral diverticula develop as a result of trauma, infection, impacted calculi or stricture disease and post-surgery complication resulting after urethroplasty, hypospadias repair, long-term indwelling catheter use in spinal cord injury patients [3].

The possible etiology is an injury of the urethra, which may cause an intra-spongiosal hematoma. This hematoma could create a para-urethral space and subsequent diverticulum or fistula [4].

Symptoms of urethral diverticula depend on their size, site, and the degree of obstruction. The most common symptoms include lower urinary tract symptoms i.e. incontinence or post-void dribbling, hematuria, urinary tract infection etc. The workup of diverticula includes urinalysis, urine culture sensitivity, retrograde urethrography, cystourethroscopy, with MRI needed in some situations.

Diverticula are evaluated with Proper treatment of male urethral diverticula depends on the degree of symptoms and the risk of associated carcinoma. Small, asymptomatic lesions may be followed. Most advocate surgical repair for the management of large, symptomatic lesions. Ortlip., *et al.* [5] report 8 cases of urethral diverticula treated transurethrally. This involved using Bugbee cautery or a resectoscope to incise the diverticular neck. Zaontz., *et al.* [6] described a technique for repair of anterior urethral diverticula in 3 children after hypospadias repair, in which the penile skin was circumferentially degloved, the diverticulum excised, and the urethral defect closed with overlapping periurethral flaps. Allen., *et al.* present one of the most recent and comprehensive descriptions of a single-centre experience with male urethral diverticula. This series consisted of 21 patients, 7 with defects classified as congenital and 14 as acquired, with 19 of 21 (90%) patients undergoing surgical intervention [1].

Our patients were evaluated with retrograde urethrogram and endoscopy. First case being managed by endoscopic incision and follow up. The second patient managed conservatively due to minimum symptoms. The management of these diverticula depends upon the symptoms, location, and size. The management may be endoscopic and open excision. Predominant complications of repair are urinary tract infections, recurrence. Timely follow up, diagnosis and intervention are effective for the management of complications.

Conclusion

Although rare, urethral diverticula should be suspected in men with a history of urethral trauma, surgery or manipulation with symptoms, including hematuria, recurrent urinary tract infection, and post-void dribbling. Management of these lesions is largely dependent on the degree of associated symptoms, size, and location of symptoms. Patients with minimal symptoms may be conservatively managed as managed in our cases.

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