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Case Report

Late diagnosed congenital anterior urethral diverticulum in a male teenager: A case report

Obstructive anterior urethral conditions

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Abstract
In this case report we present the case of an 18-year-old boy with a congenital anterior urethral diverticulum. This is a rare condition in males which can lead to obstructive lower urinary tract symptoms and urosepsis. Diagnosis is made by urethroscopy and radiological imaging. Surgical treatment can be open or endoscopic. Long-term follow up is required to check for reoccurrence of the obstruction.

Keywords
Diverticulum; Urethra; Congenital

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Introduction

Male urethral diverticulum is rare [1], and is always located in the penile urethra. This may be defined as pouch-like enlargement that is continuous with the urethral lumen. An acquired diverticulum in males may be found anywhere along the urethra. The peno-scrotal junction is the most common site for anterior urethral diverticulum. This can occur in patients who have a spinal cord injury as a result of repeated urethral trauma due to bladder catheterization [2]. A diverticulum may be asymptomatic or lead to lower urinary tract symptoms. Rarely, the diverticulum may initially present as a scrotal mass.

Case Report

An 18-year-old boy presented with a two-year history of incontinence as postmicturition dribbling and sometimes dysuria. There was no other significant history. Examination revealed no abnormalities. The urine culture was sterile. The volume of postmicturition residual urine was 103 ml. However, the average urinary flow rate was 16.7 ml/s. Rigid cystoscopy revealed an anterior urethral diverticulum (Figure 1). During the retrograde urethrogram, we were unable to obtain an image because of an error of the scopy machine. We incised the neck of the diverticulum with a cold knife (Figures 2-4). The patient's urethral catheter was taken 5 days after the operation. In the postoperative first month the average flow rate is 19.8 ml/s and the volume of postmicturition residual urine is 33 ml. The patient's postmicturition dribbling symptom stopped. It was planned to monitor the urinary flow rate and postmicturition residual urine at the out-patient clinic and to repeat the diverticulum neck incision if the flow rate worsens.

Discussion

Urethral diverticulum belongs to a spectrum of obstructive anterior urethral conditions that include anterior urethral valves. Some authors do not distinguish between the conditions while others do [3]. A common feature is a blind-ending outpouching of the urethra. Anterior urethral valve is completely contained within the corpus spongiosum whereas a diverticulum breaches through the corpus spongiosum into the surrounding tissue. We have not made the distinction in this paper as the management is the same for both. A flap can develop at the lip of the diverticulum which rises into the urethral lumen as the diverticulum fills with urine, causing an obstruction. Congenital urethral diverticulum in males is rare, and patients can present with poor urinary flow, postmicturition dribbling, urinary tract infections, or penile ballooning in the neonatal and infancy period [4,5], although later presentations in the teenage years have been known. The etiology is unknown but theories include a ruptured syringocele, cystic dilatation of the periurethral glands, and incomplete hypospadias[6].

Retrograde urethrography and voiding cystourethrography may be used to image the male urethra [5,7]. Urethroscopy will reveal an appearance of the urethral lumen splitting into the two-one passage is the true lumen while the other is the diverticulum, with the flap or distal lip of the diverticulum dividing the two.

Conclusion

Management of the lesion can be endoscopic or open [3,8]. We adopted an endoscopic approach with incision of the lip of the diverticulum, although, as the diverticulum pouch still exists, it can again develop a flap, requiring repeat procedures. Subsequent scar tissue formation may result in a urethral

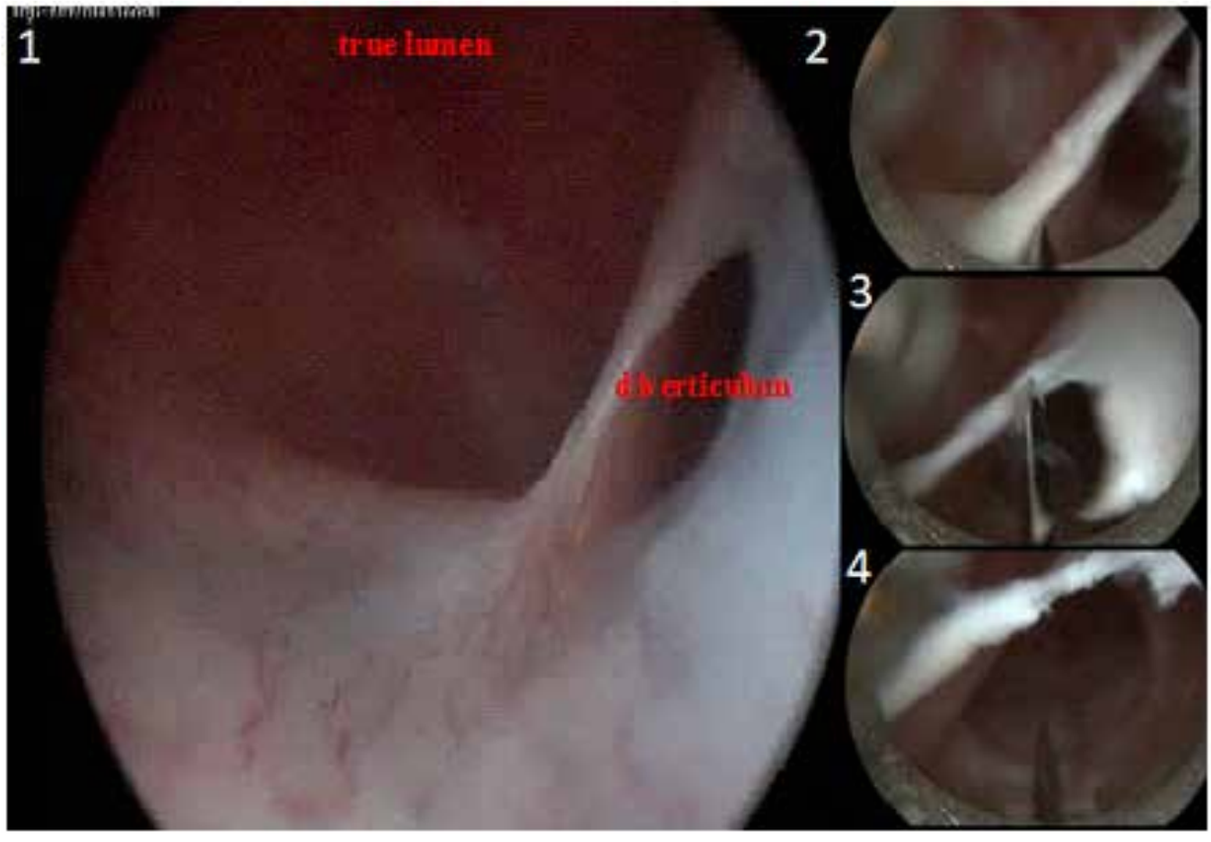


Figure 1. Cystoscopic view of the anterior urethra, showing the true lumen and the urethral diverticulum before the operation.
2-4. Cystoscopic views of the anterior urethra, showing the true lumen and the urethral diverticulum during operation. A band of tissue separates the two, and this was subsequently incised.

stricture which, like the diverticulum, can cause poor urinary flow, recurrent urinary tract infections, and bladder stones. Therefore regular endoscopic surveillance and correction may be required. An open approach (patch graft urethroplasty) can also be used to excise the diverticulum permanently and reconstruct the urethra, giving it a more uniform calibre; however there is a risk of urethrocutaneous fistula formation. If the patient has urosepsis or obstructive nephropathy, temporary urinary diversion by suprapubic catheterization can be employed before surgical treatment [1].

Scientific Responsibility Statement
The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement
All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

Conflict of interest
None of the authors received any type of financial support that could be considered potential conflict of interest regarding the manuscript or its submission.

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