Male anterior urethral diverticula with Cobb’s collar and a giant stone

Sir,

A 35-year-old man presented with diminution of the urinary stream, frequency, dribbling and a painful perineal protrusion for the past two decades. Examination revealed a hard tender perineal swelling and a small non-discharging blindly ending perineal sinus. Plain X-ray of the pelvis [Figure 1a] showed a giant elliptical urethral calculus (3.5 cm). The retrograde urethrogram revealed a large anterior bulbar urethral diverticulum and a Cobb’s collar, (congenital distal urethral narrowing) [Figure 1b]. The diagnosis of a congenital anterior urethral diverticulum, giant calculus and congenital distal urethral narrowing was confirmed by ureterscopy. A preliminary suprapubic cystostomy, diverticulectomy, stone removal and urethroplasty was carried out [Figure 2]. Histopathology of the excised diverticular wall revealed true urothelial lining. Infrared spectroscopic analysis of the urethral stone revealed 70% magnesium ammonium hexahydrate and 30% calcium phosphate (suggestive of an infection stone). A third month
voiding urethrogram revealed normal urethral lumen.

Urethral diverticula are rare in males,\textsuperscript{[1,3]} and arise as outpouchings from the urethral lumen and communicate with it via a narrow ostium. Most urethral diverticula (90\%) are acquired while less than 10\% are truly congenital in origin.\textsuperscript{[3]} Most congenital diverticula (formed due to faulty closure of urethral folds and persistent embryonic epithelial rests with absence of the urethral wall) are found in the anterior urethra while acquired diverticula (usually due to distal urethral obstruction, suppuration, necrosis of the urethral wall following trauma, instrumentation, false passage, or drainage of a prostatic abscess) are found in the posterior urethra. Peno-scrotal location is the commonest site for anterior urethral diverticula. Known causes of acquired diverticula in men include urethral strictures, hypospadias and post ventral scrotal onlay island flap urethroplasty. Differential diagnosis includes syringoceles (cystic dilatation of the Cowper’s gland), sequestration cysts, epidermoid and epithelial inclusion cysts. True anterior urethral diverticula always have an epithelial lining, which can be distinguished from acquired diverticula on histopathology.

Congenital urethral diverticulum was suspected in our patient because: (i) of chronic symptoms [over 20 years], that may have persisted early in life worsening with the passage of time and development of complications, (ii) radiographically proven anterior urethral (bulbar urethra) location [favor a congenital origin], (iii) absence of history of trauma and (iv) excision biopsy revealed a true pseudo-columnar uroepithelial lining. Urethral diverticula present with dysuria, incomplete emptying, post void dribbling. A perineal mass or phlegmon may also develop which if neglected, may form urethrococutaneous sinuses.\textsuperscript{[8]} Urethral stones complicate approximately 4-10\% of all diverticula.\textsuperscript{[9]}

Diagnosis is based on symptoms, retrograde urethrogram and cystourethroscopy. Associated complicating factors include urinary sepsis, stasis, phlegmon, urethrococutaneous fistulae, calculosis, bladder outlet obstruction, septicaemia and renal failure.\textsuperscript{[1,2,3,4,5]}

Asymptomatic smaller anterior urethral diverticula may be managed by watchful waiting. In case of urinary stagnation patients may be advised manual digital perineal urethral compression. Symptomatic smaller diverticula (<3 cm) with calculus may be successfully managed with diverticulotomy and urethral closure. Larger symptomatic anterior urethral diverticula (>3 cm) require open diverticulectomy and or urethroplasty after ruling out complicating factors such as distal urethral obstruction, anterior urethral valves, calculosis, syringoceles, Cobb's collar and urethral strictures which should be dealt with first.\textsuperscript{[5]} In case of co-existing sepsis, peri-urethral phlegmon or urethral stricture, a preliminary suprapubic cystostomy with staged urethroplasty is advisable.

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References