Journal of Pediatric Surgery 49 (2014) 835–839

Contents lists available at ScienceDirect

Journal of Pediatric Surgery

journal homepage: www.elsevier.com/locate/jpedsurg

Congenital urethral polyps in children: Report of 18 patients and review of literature

Aram Akbarzadeh, Reza Khorramirouz, Abdol-Mohammad Kajbafzadeh *

Pediatric Urology Research Center, Pediatric Center of Excellence, Department of Pediatric Urology, Children's Hospital Medical Center, Tehran University of Medical Sciences, Tehran, Iran (IRI)

ARTICLE INFO

Article history:
Received 26 October 2013
Received in revised form 1 February 2014
Accepted 12 February 2014

Key words:
Polyps
Urethra
Hematuria
Congenital
Urinary retention

ABSTRACT

Background/Purpose: To evaluate the presentation, diagnosis and management of congenital urethral polyps (CUP) in children and to report the results of the endoscopic resection of polyp with long-term follow-up.
Methods: Between April 1995 to March 2010, 18 children (14 boys, 4 girls) with CUP were treated. The most common presentation was urinary outflow obstruction/retention, hematuria or protruding polyp from the urethra meatus in girls. Six patients presented with vesicoureteral reflux (VUR). All children (except one) underwent a transurethral resection of the CUP.
Results: Following the endoscopic resection of the polyps, there was no polyp recurrence, and all patients became symptom-free. The children exhibited no reflux, urinary retention, hematuria or urinary tract infection (UTI) following endoscopic management. Abnormal uroflowmetry patterns returned to normal following the resection of the polyp for one year after the operation.
Conclusions: Urethral polyps must be considered in every child with history of triad of *recurrent intermittent urinary retention, hematuria and lower urinary tract symptoms*. The cure can be achieved in all cases by an endoscopic approach. This type of tumor is always benign and very rarely recurs, unless the pedicle stalk is not resected. The endoscopic management of reflux is unnecessary in this group of patients due to their natural history of secondary reflux.

Congenital urethral polyps cause a variety of symptoms in children. John Hunter is credited with the first documented case of urethral polyp, and Thompson reported the first case in a patient. Congenital urethral polyps are rare with only sporadic reports of a small series of cases [1]. Posterior urethral polyps in children are uncommon, and anterior urethral polyps are even rarer. Nevertheless, anterior urethral polyps are exceptionally reported in the literature [2–5]. These polyps are congenital and occur usually in boys; the average age of presentation is 5.2 years. Polyps in boys mostly arise from the posterior urethra, are usually proximal to the membranous urethra, and present usually as a single tumor, only rarely as multiple separate masses. This benign pathology is supposed to represent a developmental error in the invagination process of the submucosal, glandular portion of the inner zone of the prostate gland [6]. These CUPs are the most common benign mesodermal tumors of the urinary tract. Such lesions can also be called prostatic urethral polyps (in boys), fibroepithelial polyps of the urethra, or benign urethral polyps. Congenital urethral polyps more frequently occur in males and in the posterior urethra; this entity is very rare in females. CUPs should not be confused with the polyps of botryoid sarcoma [7]. The embryologic basis for urethral polyps is not clear; however, it is possible that they may arise from mesonephric remnants [8].

These lesions are benign, pedunculated tumors that arise in the region of the verumontanum in males or mid-urethra in females. In early infancy, they usually cause urethral obstruction. However, in older boys, the main presenting features include hesitancy, diminished stream, incomplete emptying, urinary retention, and sudden painful interruption of urinary stream, dysuria, hematuria, UTI, VUR, and enuresis. The final diagnosis was confirmed by meticulous urethrocystoscopy in all patients. In some cases, the polyp may be an incidental finding during a urological evaluation. We present 18 cases of congenital polyps from a single nationwide referral center for pediatric urology problem cases that were treated by successful endoscopic resection with no recurrence.

1. Methods

From 1995 to 2010, 18 patients (14 boys 4 girls) with urethral polyps were managed at our national referral institution. The patients' ages ranged from 6 weeks to 13 years (mean 3.5 years). The clinical presentation was non-specific, including such symptoms as urinary retention, (n = 7), hydroureteronephrosis (n = 4), UTI (n = 6), straining and interrupted voiding (n = 8), dysuria (n = 10) intermittent microscopic (n = 10)/macroscopic (n = 4) hematuria or VUR (n = 6) and nocturnal enuresis (n = 5). The majority of patients

* Corresponding author at: Children's Hospital Medical Center, Pediatric Center of Excellence, Tehran 1419733151, Iran. Tel./fax: +98 21 66565400.
E-mail address: kajbafzd@sina.tums.ac.ir (A.-M. Kajbafzadeh).

http://dx.doi.org/10.1016/j.jpedsurg.2014.02.080
0022-3468/

presented with the following triad of symptoms: *intermittent urinary retention, hematuria and lower urinary tract symptoms*. This triad is the first and most diagnostically significant clue for an initial clinical diagnosis of urethral polyps in children. Surprisingly, in many children, this triad may have vanished following a single urethral catheterization and bladder emptying for several weeks or months. It is very hard to explain this phenomenon; however, polyp and urethra manipulation might create some changes (edema), causing the bladder to retain the pedunculated polyp inside.

Urethral polyps were initially not diagnosed by ultrasonography in most cases; however, suspicions were aroused in voiding cystourethrograms due to a filling defect (Fig. 1) or a physical examination in girls (Fig. 2). The diagnosis was confirmed by precise direct videourethrocystoscopy (Fig. 3).

All but one of the polyps were resected by the transurethral approach; a single large polyp not possible to retrieve from the urethra. One child with CUP and high-grade reflux with a poor functioning right kidney was on clean intermittent catheterization at the district hospital. However, at the age of 11, he had become azotemic due to chronic urinary retention and underwent a right nephrectomy and ureterocystoplasty without a diagnosis of posterior urethral polyp prior to referral. In twelve boys, it was possible to retrieve the resected polyp from the bladder with grasping forceps or a ureteral stone basket. However, there was the one boy who had concomitant percutaneous cystostomy polyp retrieval for a very long pedunculated polyps swing from the urethra to the bladder neck by irrigation fluid (Fig. 4).

The size of the polyp was measured and recorded in 12 cases, ranging from 20 to 43 mm. The size of the remaining 6 polyps was not possible to be accurately obtained because the polyps were resected in several pieces. The histologic examination was confirmed the clinical diagnosis in all cases as fibroepithelial polyps. There was no recurrence in long term follow-up. The VUR was managed endoscopically in one boy prior to referral. However, the remaining boys with reflux were given no antireflux management, and their reflux was resolved spontaneously after operation. There was a low grade VUR in one girl only during the voiding phase, which was resolved after the polyp surgery. Uroflowmetry was performed in 8 patients prior to and after the operation. The urine flow pattern had a unique and not previously described uroflow model and shape. We called it “mixed obstructive and tower shaped patterns” (Fig. 5).

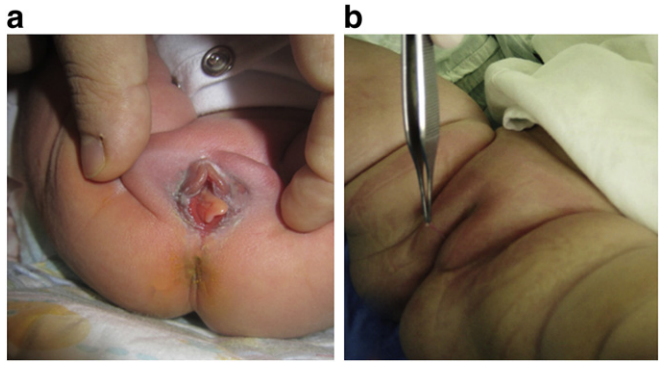

Fig. 2. (a), (b) Female urethral polyp.

2. Results

All of the patients had an uneventful postoperative course and were discharged home within the first 24 h following the endoscopic resection of their polyps. The urethral catheter was removed on day five postoperatively. All children received a single injection of intravenous antibiotic during the induction of anesthesia and oral cephalosporin for one week postoperatively. Children with VUR were kept on prophylactic antibiotics for 6 months. There was no polyp recurrence, and all patients became symptom free. The children had no reflux, urinary retention, hematuria or UTI following endoscopic management. The uroflowmetry pattern returned to normal following the resection of the polyp, one year after the polyp resection in toilet-trained children. No recurrence was noted following the cystoscopy or during the follow-up urinary tract ultrasonography. The follow-up ranged from 3 years up to 17 years with no polyp recurrence. The

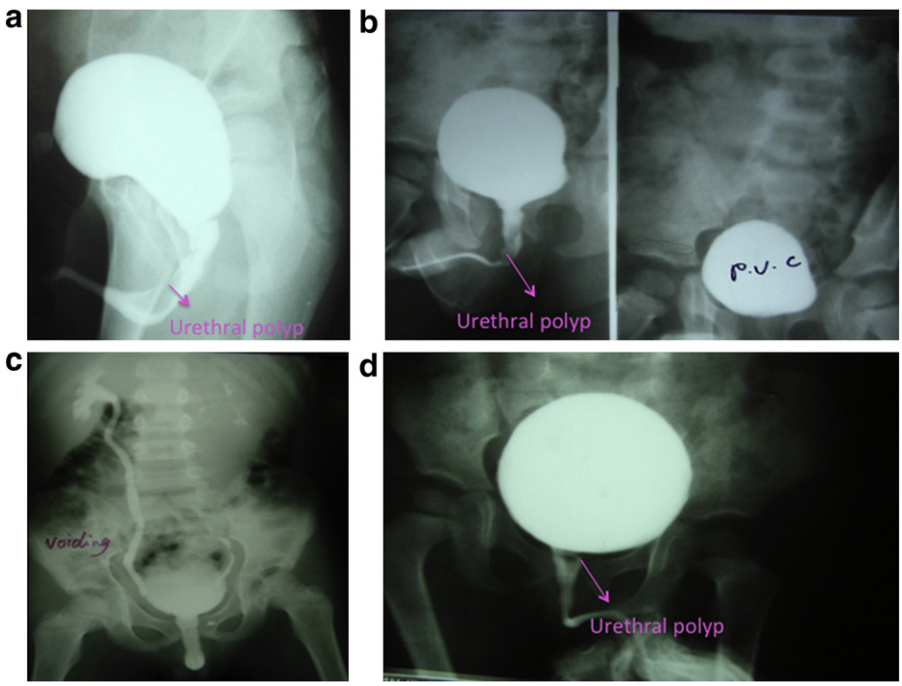

Fig. 1. VCUG. (a) Large posterior urethral polyp in a boy. (b) Posterior urethral filling defect with significant post-voiding residue. (c) Dilated posterior urethra with a faint filling defect, referred to as posterior urethral valves. (d) A bladder neck-filling defect compatible with polyps.