CASE REPORT

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A Case of Posterior Urethral Valve and Posterior Urethral Polyp Accompanying Ureteropelvic Stenosis

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ABSTRACT Benign fibroepithelial polyp of the prostatic urethra is a rare congenital lesion in the pediatric population that can lead to acute urinary obstruction, difficulty in urination, and hematuria. It is seldom asymptomatic. Diagnosis is established through ultrasonography, voiding cystourethrography, and urethrocystoscopy. During the follow-up of our 18-month-old male patient, who was monitored for antenatal hydronephrosis, cystoscopy revealed minimal posterior urethral valve (PUV) and urethral polyp. Retrograde pyelography was performed showing ureteropelvic junction stenosis. The polyp was excised using monocautery, and cold knife resection was performed for the PUV. Subsequent ultrasound assessments demonstrated a regression in the patient's hydronephrosis. We aim to present this rare case in the context of existing literature.

Keywords: Posterior urethral polyp; cystoscopy; posterior urethral valve

Congenital urethral polyps represent rare anomalies that typically manifest proximally and posteriorly to the membranous urethra. These polyps are believed to stem from mesonephric remnants, arising due to developmental errors in the formation of the prostate gland.[1] They give rise to diverse symptoms, including acute urinary obstruction, urination difficulties, and episodes of hematuria.[2] Diagnosis can be achieved through ultrasonography and voiding cystourethrogram when clinical suspicion arises. Additionally, endoscopic direct vision, facilitating endoscopic excision, may be a preferred diagnostic and therapeutic approach.

CASE REPORT

The instutitional review board is not required for this case report. Necessary permissions were obtained from the patient's family. Our case was an 18-month-old male patient followed up for antenatal right hydronephrosis. Table 1 presents the ultrasound follow-ups conducted from the patient's birth to the 18th month. Accumulated activity retention in the pelvicalyceal structures of the right kidney, observed in the Mag3 performed at 3 months of age, was discharged after diuretic injection. Renal functions were measured at 56% on the right and 44% on the left. No reflux was observed in the cystogram (Figure 1). Considering the stenosis in the right ureteropelvic junction, retrograde pyelography (RPG) was planned for the patient.

During cystoscopy, a 0.5-0.7 cm long polypoid lesion originating from the verumontanum and extending to the bladder was identified (Figure 2, Figure 3). Simultaneously, minimal posterior urethral valve (PUV) was detected in the prostatic

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TABLE 1: 1-18 months renal ultrasound follow-up.

		Right	Left
1 month old	Kidney size	58x27.5x33 mm	52x26x30 mm
	AP	13 mm	3 mm
	Major calyx lower pole	9 mm	
	Upper pole	6 mm	
	Terminal calyx	9-12 mm	
	Peripyramidal	2 mm	
	Interpremidal	7 mm	
6 month old	Kidney size	70x29x36 mm	59x28x30 mm
	AP	15 mm	
	Major calyx lower pole	9 mm	
	Upper pole	6 mm	
	Terminal calyx	9-12 mm	
	Peripyramidal	2.5 mm	
	Interpremidal	7 mm	
12 month old	Kidney size	71x31x36 mm	63x32x30 mm
	AP	20 mm	
	Major calyx lower pole	8 mm	
	Upper pole	7 mm	
	Terminal calyx	8-11 mm	
	Peripyramidal	3.5 mm	
	Interpremidal	7 mm	
18 month old	Kidney size	71x37x27 mm	64x32x33 mm
	AP	20 mm	
	Major calyx lower pole	9.5 mm	
	Upper pole	6 mm	
	Terminal calyx	12-18 mm	
	Peripyramidal	2.5 mm	
	Interpremidal	7 mm	

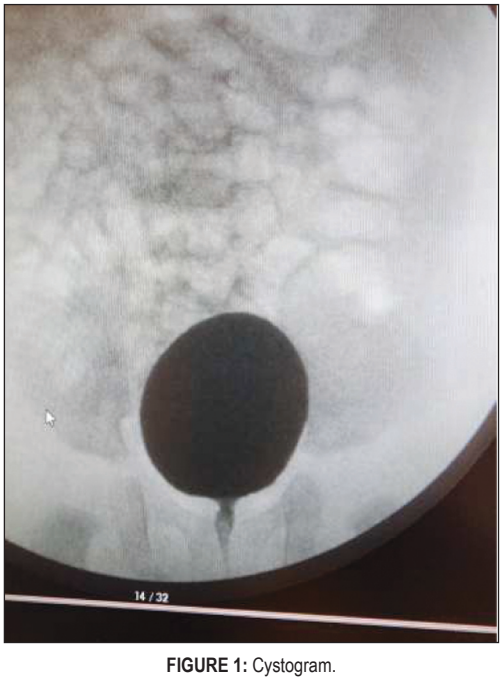

FIGURE 1: Cystogram.

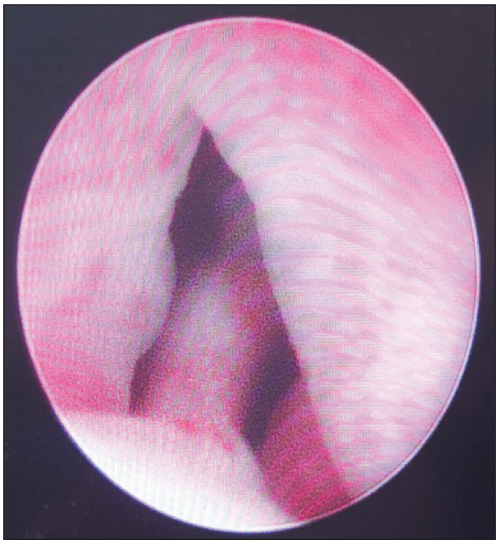

FIGURE 2: Urethral polyp.

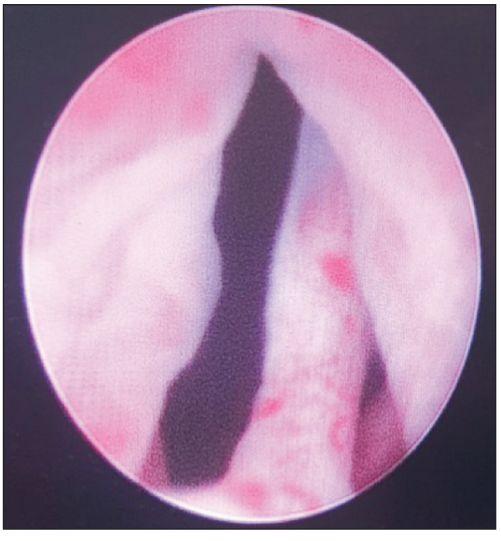

FIGURE 3: Urethral polyp.

level of the patient's urethra at the 5 and 7 o'clock positions. The bladder and ureteral orifices appeared normal. Right RPG was performed, revealing suspected stenosis in the right ureteropelvic region, where the ureter was observed folding into the pelvis (Figure 4).

A resectoscope was used to access the ureter, and the polypoid structure was excised with monopolar cautery. PUV resection was carried out with a cold knife on the valves at the 5-7 o'clock positions. The pathology analysis of the removed polyp revealed fibrotic tissue lined with ureteral epithelium (Figure 5). The postoperative 1-year follow-up of the patient is provided in Table 2.

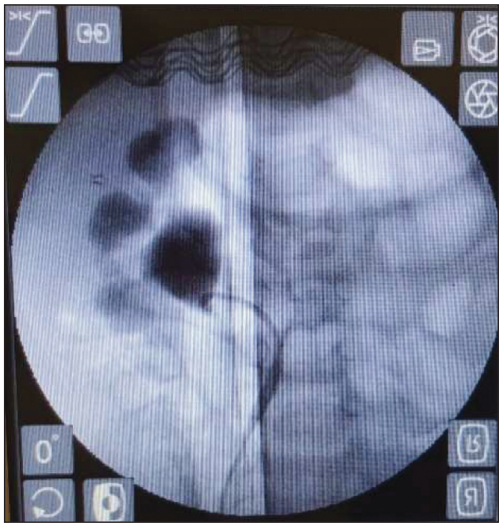

FIGURE 4: Retrogradepyelography.

TABLE 2: Postoperative 1-year ultrasound follow-up.

		Right	Left
19 month old post-operative 1st month	Kidney size	85x35x40 mm	78x34x30 mm
	AP	15 mm	
	Major calyx lower pole	9.5 mm	
	Upper pole	6 mm	
	Terminal calyx	8-10 mm	
	Peripyramidal	2.5 mm	
	Interpremidal	8 mm	
30 month old post-operative 12th month	Kidney size	86x38x44 mm	78x35x31 mm
	AP	12 mm	
	Major calyx lower pole	10 mm	
	Upper pole	6 mm	
	Terminal calyx	8-10 mm	
	Peripyramidal	6 mm	
	Interpremidal	11 mm	

We aim to discuss this highly uncommon anomaly with literature review.

DISCUSSION

Urethral polyps represent a rare anomaly within the urethra, and their exact incidence remains unknown. In the pediatric population, these polyps are predominantly congenital and typically occur in the verumontanum, presenting as benign fibroepithelial polyps.[3] Primary symptoms include acute urinary retention, bladder neck prolapse, intermittent obstruction due to urethral blockage, hematuria, urinary tract infections, and enuresis. Eziyi and colleagues have reported, based on their own case analyses, the necessity to suspect urethral polyps due to urinary dysfunction and obstruction features.[4-6] Kearney et al. reported that obstruction was the most common presenting symptom (48%), followed by hematuria (27%) and retention (25%; n=48).[7,8] In our case, 18-month-old patient was using diapers. The family did not notice any difficulty with urination.

Downs reported that these polyps originate from nonregressive remnants of Müller's tubercle.[8] Studies indicate that 50% of patients with urethral polyps also have another urinary system anomaly, primarily vesicoureteral reflux.[2] Vesicoureteral reflux and PUVs were not observed in our patient's cystogram.

Unlike valves in the posterior urethra, polyps are generally found not to cause damage to the urinary tract.[9] While ultrasonography and voiding urethrocystogram serve as crucial imaging studies

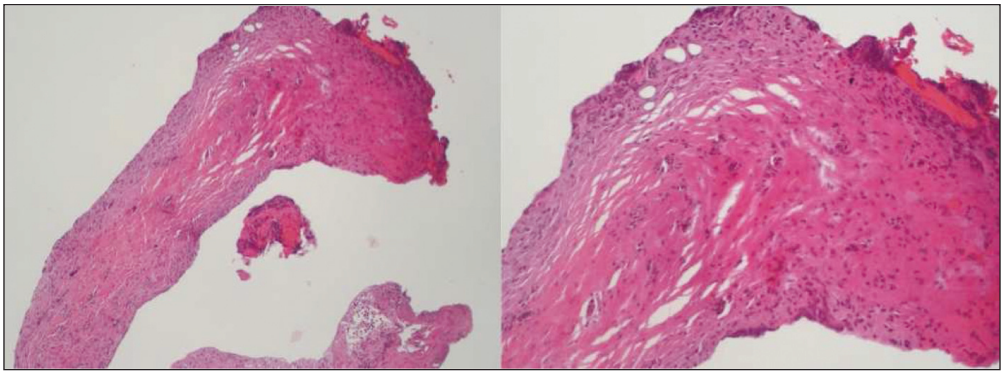

FIGURE 5: Mucosal tissue in polypoid view with fibrous stroma (H&E, x40), Urethelial epithelial and fibrotic stroma are observed on the surface (H&E, x100).

for diagnosis, confirmation is achieved through urethrocystoscopy. Treatment options include transurethral resection with electrocoagulation, cold knife, or laser, with a transvesical approach being suitable for polyps larger than 1 cm after endoscopic examination.[2] Open surgery is reserved for cases where transurethral resection, suprapubic endoscopic approach, or a combination of these techniques is not feasible. The prognosis is typically excellent with no recurrence following complete resection.[10]

Our patient did not exhibit clinical findings of difficulty in urination or hematuria. During diagnostic RPG performed for suspected right ureteropelvic stenosis, polyp were incidentally identified in the PUV and verumontanum. Polyp excision with monopolar cautery was performed to prevent bleeding, followed by intervention in the PUV with a cold knife. To minimize the risk of bleeding during intervention, PUV resection was prioritized after polyp excision. Castro et al. treated 17 cases of posterior urethral polyps endoscopically, with patients ranging in age from 4 months to 12 years, and reported no complications or recurrences. This demonstrates the safety and efficacy of transurethral endoscopic resection in the pediatric population. Histological features of the cases were reported as fibroepithelial polyps.[11] The pathology of our case was also identified as a fibroepithelial polyp (Figure 5).

The patient underwent a postoperative 1-year ultrasound follow-up Table 2.

Perfusion and concentration functions of both kidneys were normal at the postoperative 6th month Mag3. Activity retention observed in the upper and middle pole calyx of the right kidney during the expression phase was discharged after diuretic injection. Renal functions were measured at 50% on the right and 50% on the left.

The patient had no problems with urination during the one-year postoperative follow-up. Follow-up with ultrasound continues at 6-month intervals.

Source of Finance

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Dilşad Dereli;* ***Design:*** *Dilşad Dereli;* ***Control/Supervision:*** *Boran Tokar;* ***Data Collection and/or Processing:*** *Dilşad Dereli;* ***Analysis and/or Interpretation:*** *Dilşad Dereli;* ***Literature Review:*** *Dilşad Dereli;* ***Writing the Article:*** *Dilşad Dereli;* ***Critical Review:*** *Boran Tokar.*

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