FIBROEPITHELIAL POLYPS CAUSING URETEROPELVIC JUNCTION OBSTRUCTION IN A CHILD

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Fibroepithelial polyps of the ureter are benign tumors arising from mesodermal tissue in the ureter wall. They are extremely rare lesions that can cause ureteropelvic junction obstruction in children. In this report, we describe an 11-year-old boy with fibroepithelial polyps of the ureter that caused left ureteropelvic junction obstruction. He presented with a 6-month history of left abdominal and flank pain. He also had short stature. Intravenous pyelography showed hydronephrosis without filling defects at the left ureteropelvic junction. Exploration revealed several finger-like polyps obstructing the lumen. This area was resected segmentally and a dismembered pyeloplasty was performed. No complications occurred during the postoperative period. The boy caught up in growth after the operation. Fibroepithelial polyps were confirmed by histology.

Key Words: fibroepithelial polyps, ureteral obstruction, hydronephrosis

Primary benign ureteral tumors are rare. They arise from the mesodermal tissue of the ureteral wall and include fibromas, leiomyomas, granulomas, neurofibromas, fibroepithelial polyps, hemangiomas, and endometriosis [1]. Fibroepithelial polyps of the ureter are rarely encountered in children and commonly arise in the proximal ureter, causing ureteropelvic junction obstruction and hydronephrosis [2]. Hydronephrosis impairs the ability to concentrate urine and causes growth retardation in children. Pyeloplasty is an effective treatment for improving renal function and somatic growth in children with ureteropelvic junction obstruction [3]. We present a case of hydronephrosis due to obstructive fibroepithelial polyps in a boy with short stature.

CASE PRESENTATION

An 11-year-old boy presented with a 6-month history of left abdominal and flank pain. He also had short stature, below the third percentile of general growth distribution. Chromosome study produced normal results. Renal ultrasound demonstrated left hydronephrosis. Intravenous pyelography showed a dilated pelvicalyceal system and obstruction at the left ureteropelvic junction (Figure 1). No filling defects were noted. A voiding cystourethrogram revealed no reflux. Diuretic diethylenetriaminepentaacetic acid renal scan showed that the glomerular filtration rate in the left kidney decreased from 43.04 mL/min in the initial scan to 34.6 mL/min 9 months later. Due to the deterioration in left renal function and progressive change in left obstructive uropathy, the left ureteropelvic region was explored and several finger-like polyps were found (Figure 2). This area was resected segmentally and a dismembered pyeloplasty was performed. A double-J catheter stent was left behind. No complications occurred during the postoperative period. Three months postoperatively, the stent...
was removed. Subsequently, the patient’s height increased by 5 cm (within an appropriate height range for his age). Pathologic examination revealed benign fibroepithelial polyps with urothelium overlying a thick fibrovascular cord that contained congestion and focal myxoidematous change (Figure 3).

**DISCUSSION**

Fibroepithelial polyps of the urinary tract are benign mucosal projections composed of fibrous stroma lined with surface epithelium [1]. They are an infrequent cause of urinary tract obstruction in adults and are even rarer in children. Fibroepithelial polyps occur predominantly in males and on the left side [4,5]. The exact etiology of the polyps is not certain. Various theories have been proposed, including congenital obstruction, trauma, irritation, infection, and specific endogenous and hormonal imbalances [6].

These benign polyps most often arise at the ureteropelvic junction followed, in order of decreasing frequency, by the posterior urethra and distal and mid ureter [5]. Patients with fibroepithelial polyps usually present with hematuria or flank pain from obstructive hydronephrosis [7]. Macksood
et al reported renal colic in 76% of patients, hematuria in 65% of patients, and vague abdominal or flank pain in 33% of patients [2].

Primary ureteral tumors in childhood are rare compared with other causes of ureteropelvic junction obstruction such as aberrant vessels, fibrotic bands, papillary valves, and fibrotic tissue [8]. In one study, the incidence of patient ureteropelvic junction obstruction caused by fibroepithelial polyps was 0.5% [9]. However, differentiating fibroepithelial polyps from other causes of ureteropelvic junction obstruction remains difficult. The usual radiographic presentation of benign polyps is a long, thin, filiform, lucent defect within the ureteral lumen, which can be mistaken for a mucosal fold [10]. In one study, only 22% of patients had a preoperative diagnosis of polyps [9].

Long-standing back-pressure caused by complete obstruction has been suggested to lead to cortical atrophy and a nonfunctioning kidney. In our patient, left renal function deteriorated within 6 months. We subsequently performed surgery to save the left kidney.

Appropriate treatment for these benign polyps is local excision via a dismembered pyeloplasty [2,9]. Adey et al emphasized the importance of using a dismembered pyeloplasty because polyps can potentially be missed if a spiral flap or Y-V pyeloplasty is used [9]. No recurrence has been demonstrated over up to 15 years of follow-up in reported cases [5].

Short stature was noted in our patient, a condition concerning his parents. Renal disease is a common cause of growth retardation in children, even when the glomerular filtration rate is normal. West and Smith found a high incidence of impaired urine concentrating ability, reduced caloric intake, and chronic acidosis in children with growth retardation [11]. Urinary tract infection, hydronephrosis, and obstructive uropathy impair urine concentration ability [3,12]. Height is a better predictor of long-term growth than weight: 63% of patients presenting with grade 3 or 4 unilateral hydronephrosis in the Tapia and Gonzalez study were below the 50th percentile for height [3]. The mean age at surgery in their report was 2.5 years, with infants being more adversely affected, although they were better able to catch up (with regards to height) after pyeloplasty. Serum creatinine levels decreased significantly after unilateral pyeloplasty in all children. In our case, the patient reached a normal height within 3 months of the operation.

In conclusion, fibroepithelial polyps of the ureter are rare benign lesions in children. Excision and dismembered pyeloplasty are the appropriate treatments, and recurrences have not been observed. The age for surgery in children remains controversial. However, overall renal function and body growth must be considered in the protocols designed to compare outcomes in children with hydronephrosis treated surgically with those who are simply observed.

REFERENCES

纖維上皮息肉造成腎盂輸尿管結合處阻塞

在一位生長遲緩的男童

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輸尿管纖維上皮息肉是來自中胚層組織，且極少造成兒童腎盂輸尿管結合處阻塞。本文中，我們報告一位 11 歲男童罹患輸尿管纖維上皮息肉的病例。該病人主述左腰及左腹疼痛，並有身材矮小的問題。靜脈腎盂攝影發現左側腎盂輸尿管結合處阻塞併腎水腫。手術中發現有數條手指狀息肉造成輸尿管阻塞，治療方式是將有息肉的輸尿管切除及進行腎盂整形術。病人術後狀況恢復良好，身高亦趕上同年齡標準。病理報告證實為纖維上皮息肉。

關鍵詞：纖維上皮息肉，輸尿管阻塞，腎水腫
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