

Transitional Cell Carcinoma in Children: Report of a Case and Review of the Literature

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Introduction

Transitional cell carcinoma (TCC) of the bladder is a rare condition in the first 2 decades of life, and it occurs nearly 9 times more frequently in males as it does in females. Since 1950, only 100 cases of TCC of the bladder have been reported in patients younger than 21 years.⁽¹⁾ TCC of the bladder in children under 10 years is extremely rare, and by 1983, it was reported in only 17 cases.⁽²⁾ The aim of this study is to report TCC of the bladder in a 9-year-old girl, who was referred to our institution with a chief complaint of gross hematuria.

Case Report

A 9-year-old girl from Shahrood (Semnan province, Iran) who had gross hematuria of 2 weeks' duration was referred to our institution. Her hematuria was painless and intermittent and was accompanied by clotting in the urine. The patient had a history of urinary retention. Results of her laboratory tests were normal, and numerous red blood cells were seen on urinalysis. The patient had no history of urinary tract infection, and her family history was also unremarkable. On sonography, the kidneys were normal, and a papillary mass measuring 9 × 11 mm was reported in the trigon (Figure 1). On intravenous pyelography, no pathologic finding was seen. Cystoscopy, performed under general anesthesia, revealed a solitary and pedunculated papillary mass at the trigon. Ureteral orifices and other parts of the bladder were normal. The mass was resected using a resectoscope. Pathologic report confirmed a grade 1 TCC tumor (Figures

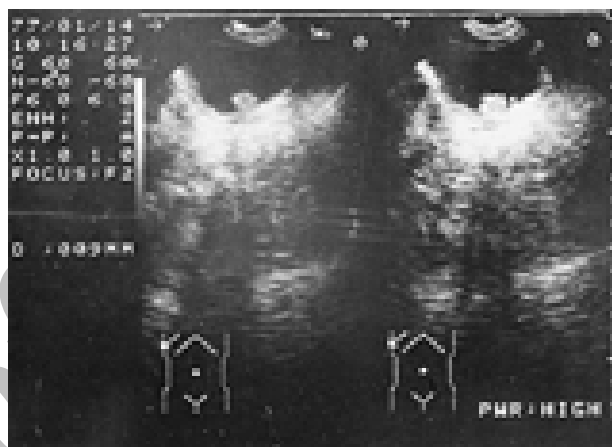


FIG. 1. Ultrasonography revealed a bladder tumor in a 9-year-old girl.

2 and 3). The patient was discharged on the second postoperative day in good general condition.

She was followed using cystoscopy and ultrasonography of the kidneys and bladder, which showed no recurrence in 6 postoperative years.

Discussion

Malignancies of the bladder in children are



FIG. 2. Pathologic feature of the bladder tumor (× 10)

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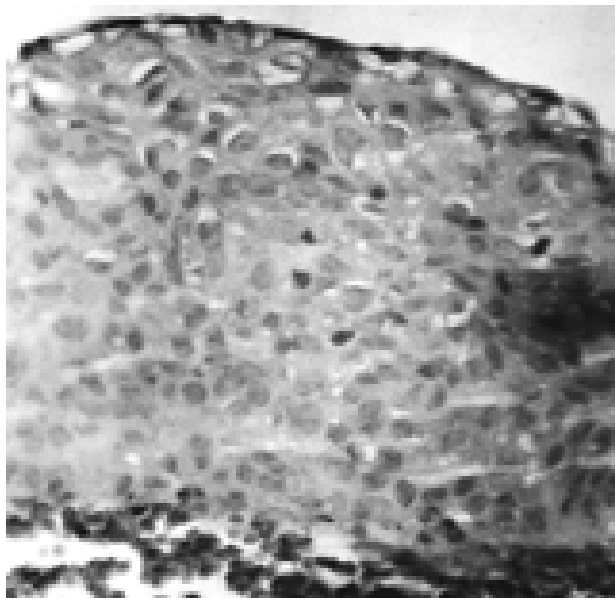


FIG. 3. Pathologic feature of the bladder tumor ($\times 40$)

mainly of nonepithelial origin, and tumors with epithelial origin are extremely rare.⁽³⁾ Benson and coworkers reported only 3 cases of TCC of the bladder in patients under 10 years at a large referral center during a 30-year period.⁽¹⁾

The mean age of TCC occurrence in children is 11.8 years.⁽²⁾ The male-to-female ratio is 9:1,⁽⁴⁾ and it is 39 times more common among white children than among black ones.⁽²⁾ Its major symptom in children is painless hematuria. Therefore, although it is a rare condition in children, it should always be considered in the differential diagnosis of hematuria during the first 2 decades of life.⁽¹⁾ Some children may be referred with urinary tract infection and irritative voiding symptoms.^(2,5) Our patient had a history of urinary retention, and to the best of our knowledge, this has not been reported in any prior articles.

In the cystographic phase of an intravenous pyelogram, a filling defect is generally seen, but in some patients, this defect is revealed only by cystoscopy.⁽²⁾ Hoenig and colleagues have reported a 100% sensitivity of ultrasonography in detecting bladder tumors, while pyelography can reveal tumors in only 75% of cases.^(5,6) In our patient, the defect was first detected on sonography, while results of the intravenous pyelography were normal. Although urine cytology has shown positive results in a few cases, it is not an appropriate method for TCC diagnosis in children⁽²⁾ because the tumors are often low-grade.⁽⁵⁾

Most bladder epithelial tumors in children are

low-stage and low-grade solitary tumors.^(3,7) Most authors believe that TCC of the bladder is obviously more benign in children than it is in adults.⁽⁸⁾

However, some authors believe that the natural history of TCC in children is the same as it is in adults.⁽⁹⁾ Currently, the ideal treatment of TCC in children is transurethral resection of the bladder tumor with subsequent follow-up. In cases with several or invasive tumors, treatment is similar to that in adults. Data to determine the appropriate method for follow-up are insufficient owing to the extremely low prevalence of the disease. Some believe that TCC in children should be followed by the same protocols as those used for adults, while others believe that follow-up could be performed using ultrasonography (a sensitive and noninvasive method) and that intervals between cystoscopic evaluation should be lengthened owing to the possibility of urethral injury during cystoscopy and the need for general anesthesia.

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