TRANSITIONAL CELL CARCINOMA OF BLADDER IN A 9-YEAR-OLD BOY

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ABSTRACT

Introduction: **Transitional cell carcinoma of the bladder is a rare entity in childhood. We report on a 9-year-old boy with transitional cell carcinoma of the bladder who presented with gross hematuria. Ultrasonography revealed a papillary lesion in the bladder. Cystoscopic evaluation showed a papillary lesion with a stalk located just above the right ureteral orifice and transurethral resection was performed. Pathologic evaluation of the specimen was reported as low grade transitional cell carcinoma of the urinary bladder. Invasion of the lamina propria was not observed.**

Key words: **Bladder, Transitional cell carcinoma, Childhood**

ÖZET

Mesanenin değişici epitel hücreli kanseri (DEHK) çocukluk yaş grubunda oldukça ender görülmektedir. Geniş serileri içeren çalışmalardan elde edilen verilere bakıldığında genelde bu tümörlerin düşük malinite ve nüks potansiyeline sahip olduklarını görmekteyiz. Mesane DEHK tanılı 25 çocuk hastayı içeren bir derlemede bunların sadece %3'ünde lamina propria invasyonu olduğu görülmüştür. Bu çalışmada 9 yaşında tanı konulan mesanenin Ta düşük dereceli DEHK olgusu takdim edilecektir. Ağrısız idrarında kan gelmesi şikayetiyle polikliniğimize başvuran hastaya yapılan idrar tahlilinde çok sayıda kan hücresi görüldü. İdrar kültüründe üreme olmadı. Yapılan ultrasonografisinde mesane sağ yan duvar-taban bileşkesinde mesane lümenine uzanım gösteren 12,2x7,7 mm boyutunda papiller lezyon saptandı. Genel anestezi altında yapılan sistoskopisinde tariflenen lezyonun sağ orifisin hemen üstünde papiller karakterde olduğu görüldü ve aynı seansta transüretral rezeksiyonu (TUR) yapıldı. Başka lezyona rastlanmadı. Patolojik incelemesinde lamina propria tutulumu göstermeyen derece 1 değişici epitel hücreli kanser (TaG1) saptandı. Bu olguda etiyolojik etken olarak sigara, radyasyon ve kemoterapötiklere maruz kalma, daha önceden geçirilmiş kanser öyküsü, ailede kanser öyküsü araştırıldı ve anlamlı bir bulguya rastlanmadı. Sonuç olarak hematüri ile gelen çocuk yaş grubu hastalarda mesane tümörü de olabileceği akılda tutulup tam bir değerlendirme yapılması önerilmektedir. Bizim olguda olduğu gibi erken tanı sayesinde çocukluk yaş grubu mesane tümörlerinde çoğu kez tek başına TUR tedavide yeterli olmaktadır. Her ne kadar bu yaş grubu kanserler düşük evreli ve düşük nüks potansiyeline sahip olsa da beş yıl süresince nüks açısından sıkı izlenmeleri gerekmektedir.

Anahtar kelimeler: Mesane, Değişici epitel hücreli kanser, Çocukluk çağı

INTRODUCTION

Bladder tumors rarely occur in the first two decades of age, and they are commonly of mesodermal origin. Reported cases of transitional cell carcinoma (TCC) of the bladder in the pediatric population are less than 150. In 1969, Javadpour and Mostofi studied the records of 10,000 patients with urothelial malignancy and found that 40 patients were younger than 20 years old[1]. Large series have described the characteristics of these tumors as low grade and seldom recurring[1-3]. A review of the 25 patients younger than 10 years old with TCC of the bladder revealed that only 3% of them had lamina propria invasion[4]. We report a case of a 9-year-old boy with Ta low grade TCC of the bladder.

CASE REPORT

A 9-year-old boy presented with a 1-month history of macroscopic hematuria. His history revealed no exposure to any chemotherapeutic agents. His familial history was also negative for bladder cancer. Urinanalysis revealed numerous red blood cells, and the urine culture was negative. Abdominal ultrasonography showed an endovesical papillary lesion of 12.2 x 7.7 mm located on the base of bladder (Figure 1A). Cystoscopy demonstrated a papillary lesion adjacent to the right ureteral orifice and transurethral resection was performed (Figure 1B).

Pathology: The specimens received for pathological examination were grayish-white and somewhat papillary in appearance; with the largest

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fragment measuring 9 mm in its longest diameter. All of the tissue was processed. When examined, the sections revealed a papillary neoplasm and fragments of apparently normal bladder (Figure 2A). The nuclei showed uniformity, with no significant atypia and mitotic activity and the polarity was preserved (Figure 2B). There was also no pleomorphism. The other fragments showed the typical urothelium of the normal urinary bladder. Invasion of the lamina propria was not observed. The final diagnosis was papillary urothelial neoplasm of low malignant potential. Immunohistochemical analyses were performed for p53 and Ki-67 using the streptavidin-biotin complex immunoperoxidase technique. Ki-67 (Clone SP&, Labvision, 1/200) rabbit monoclonal antibody and p53 (Clone DO-7 + BP53-12, Neomarkers, 1/200) Mouse monoclenal antibody were used.

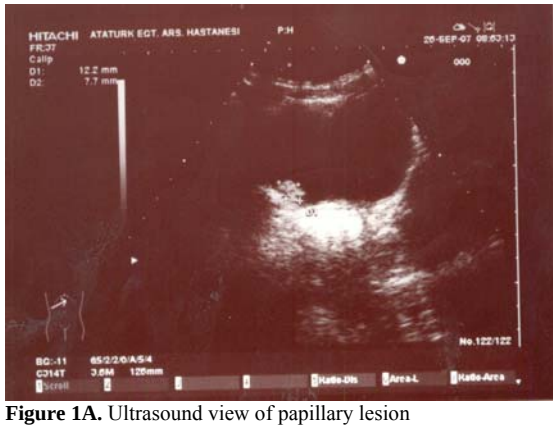

Figure 1A. Ultrasound view of papillary lesion

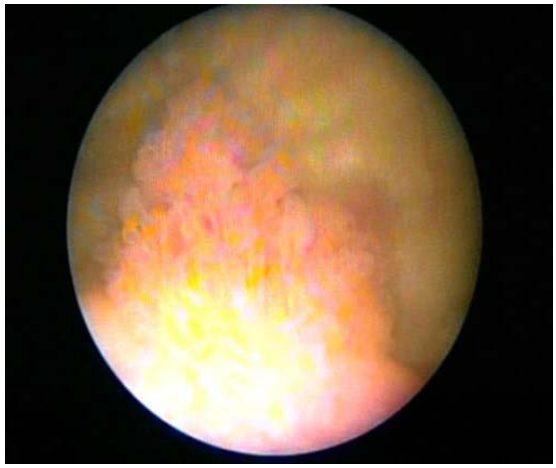

Figure 1B. Cystoscopic view of papillary lesion.

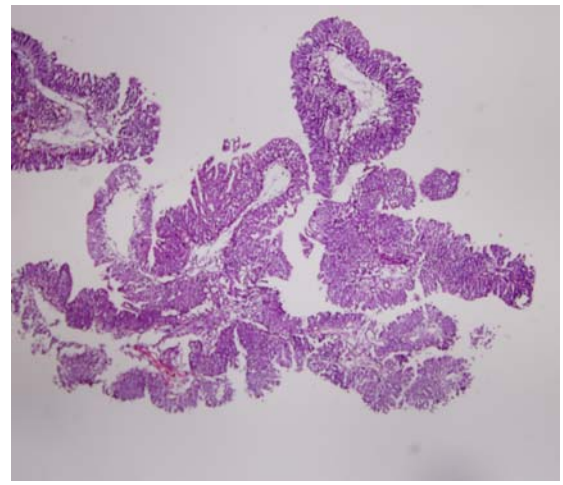

Figure 2A. The low power view of the papillary neoplasm x40 Hematoxylen-Eozin.

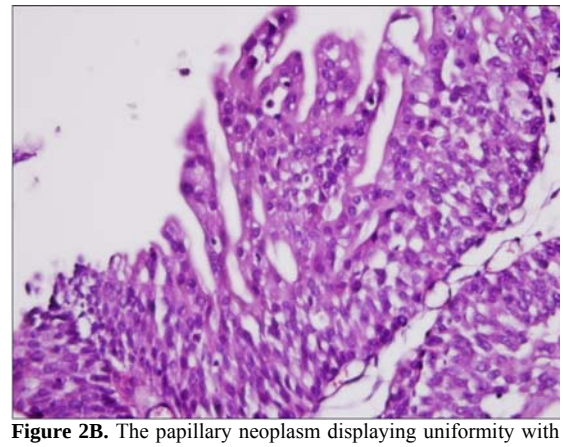

Figure 2B. The papillary neoplasm displaying uniformity with no significant atypia or mitotic activity x400 Hematoxylen-Eozin

DISCUSSION

Primary benign or malignant bladder epithelial tumors are uncommon in childhood[1,5,6]. No consensus has been reached for the appropriate treatment and follow-up of TCC of the bladder in children, because it is very rare in this age group. A review of the 25 patients younger than 10 years old with TCC of the bladder revealed that only 3% of them had lamina propria invasion and the recurrence rate was very low (2% to 5%)[4]. Because of these low recurrence rates and lack of invasion, ultrasonography was thought to be the appropriate follow-up procedure for TCC of the bladder in children. Moreover, Hoenig et al found that ultrasound was extremely effective in identifying blad-

der tumors, and they argue for its use in initial diagnosis and disease surveillance[7]. However, Paduano and Chiella reported recurrence of bladder tumors in 2 of 3 patients who were asymptomatic, with recurrence noted only at cystoscopy. Although cystoscopy requires general anesthesia in children and the risks of urethral manipulation, it may be the preferred follow-up procedure for recurrence[6]. Some studies have also demonstrated the limited usefulness of urine cytology for detecting these largely low grade lesions[2,7,8]. Additionally, it is estimated that smoking is a contributing factor in 66% of male and 30% of female cases of bladder cancer[9]. In our case we documented negative histories of previous cancer, smoking, exposure to radiation/chemotherapeutic agents, familial bladder cancer and parental occupational history associated with bladder carcinogenesis. In a study of 73 tumors in patients younger than 30 years, of which 81% were papillomas/pTa lesions, Linn et al found a high frequency of p53 nuclear staining in the majority of tumors, including those with low stage and grade, and suggested that p53 immunoreactivity may not correlate with clinical outcome in all populations with bladder cancer[10]. In our case, 1% of the tumor cells showed nuclear immunostaining with p53 antibody. Ki-67 monoclonal antibody, however, is widely used to determine the cellular proliferation rate of malignant tumors[10]. In our case had a low proliferation index, with a Ki-67 index of <1%. Cases of recurrence have been reported in children at 2 months to 5 years after treatment[6]. Although the vast majority of cases reported in young patients have had low recurrence and have been noninvasive and the proliferation index of our patient's tumor was low, we believe we should follow up this patient for at least 5 years because the outside range for recurrences has been reported as 5 years.

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