CASE REPORT: PAPILLARY TRANSITIONAL CELL CARCINOMA OF THE BLADDER IN AN 11-YEAR-OLD BOY

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ABSTRACT

Introduction: **Transitional cell carcinoma (TCC) of the bladder is seen rarely in childhood. Up to now less than 150 cases have been reported. We present a case of an 11-year-old boy with TCC of bladder. An eleven-year-old boy has admitted to hospital with painless gross hematuria for 3 months. Abdominal ultrasonography revealed 23x19 mm mass. The tumor resected and a single dose of 30 mg epirubicin was instilled within 2 hours. Pathology was reported as T1G1 TCC. Immunostaining with p53 body was negative. Additionally, tumor had a Ki-67 index of % 1-2. A repeat transurethral resection was performed to exclude muscle invasion. No residual tumor was seen. TCC of the bladder in childhood is a relatively benign lesion and aggressive treatment is seldom needed. Although majority of cases in children have low recurrence rates, recommended follow-up time for these patients is at least 5 years.**

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

ÖZET

Transizyonel hücreli mesane kanseri (TCC) çocukluk döneminde ender görülen tümörlerdir. Yayınlarda bugüne kadar 150 civarında olgu bildirilmiştir. Biz kliniğimizde takip ettiğimiz 11 yaşındaki transizyonel hücreli mesane kanseri olan erkek hastayı sunduk. 11 yaşındaki erkek çocuğu kliniğimize ağrısız makroskobik hematüri şikayeti ile başvurdu. Yapılan ultrasonda 23x19 mm'lik kitle bulunmasının ardından tümör rezeksiyonunu yaptık ve ameliyat sonrası 2 saat içinde tek doz 30 mg epirubisin intrakaviter olarak verildi. Patoloji sonucu T1G1 TCC olarak bildirildi. p53 immunoboyanması negatif, Ki-67 indeksi ise %1-2 olarak bulundu. Kas invazyonunun olmadığını göstermek için yapılan tekrar transüretral rezeksiyon yapıldı. Artık tümör izlenmedi. Çocukluk çağının transizyonel hücreli mesane tümörleri rölatif olarak iyi seyirlidir ve agresif tedavi ender olarak gerektirir. Olguların çoğunda düşük nüks oranları bildirilmesine karşın bu hastalarda önerilen izlem süresi en az 5 yıldır.

Anahtar kelimeler: Çocukluk çağı, Mesane, Transizyonel hücreli tümör

INTRODUCTION

Transitional cell tumor of the bladder is seen rarely in childhood. Up to now less than 150 cases have been reported. Javadpour and Mostofi have reported 3 cases with bladder epithelial tumors under fifteen years old[1]. Most of the tumors seen in childhood were low grade[2]. We present a case of an 11-year-old boy with transitional cell tumor of the bladder.

CASE REPORT

An eleven-year-old boy has admitted to hospital with painless gross hematuria for 3 months. There was no history of trauma, exposure to carcinogenic agents and passive cigarette smoking, urinary tract infection or bleeding tendency. Family history was also negative for bladder cancer. There were no pathological findings in physical examination. Past medical history was unremarkable. Urinalysis revealed hematuria. Urine culture was normal. Abdominal ultrasonography revealed a 23x19 mm mass on left posterolateral wall of the bladder (Figure 1). Intravenous pyelography was normal. Cystoscopy under anesthesia revealed a papillar 2x2 cm lesion adjacent to the left ureteral orifice. The tumor resected and the biopsy was taken from the base of tumor. A single dose of 30 mg epirubicin was instilled within 2 hours after resection.

Pathology was reported as low grade papillary transitional cell carcinoma with lamina propria invasion (Low grade T1). Immunostaining with p53 body was negative (Figure 2). Additionally, tumor had a Ki-67 proliferative index of 1-2% (Figure 3). A repeat transurethral resection was performed to exclude muscle invasion. No residual tumor was seen on endoscopy. The histopathologic examination confirmed this and the resected chips were reported as granulation tissue.

Date of First Application: 14.04.2008 **Accepted**: 26.05.2008

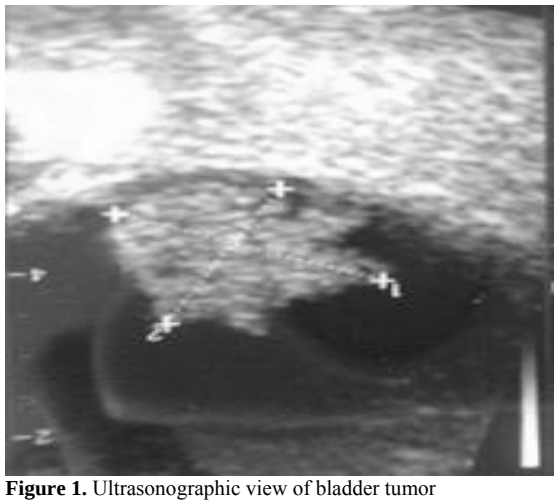

Figure 1. Ultrasonographic view of bladder tumor

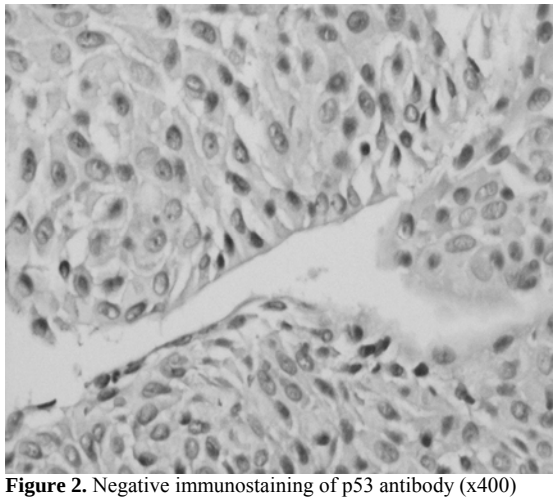

Figure 2. Negative immunostaining of p53 antibody (x400)

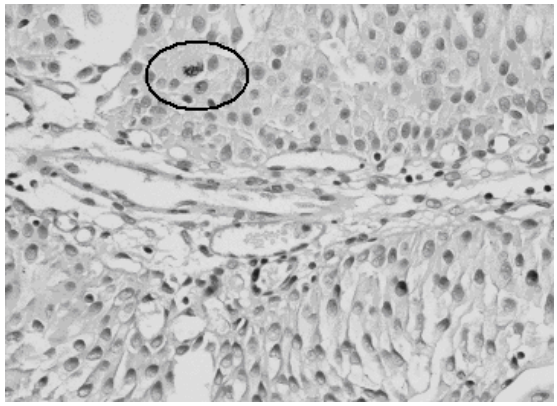

Figure 3. Ki-67 nuclear immunostaining in the basal part of epithelium.(%1-2) (x200)

DISCUSSION

Primary bladder epithelial tumors are uncommon in childhood and usually mesodermal origin[2]. As in adults, there is a male dominance and cigarette smoking may be associated with increased risk[3]. The tumors seen before 10 years old are usually superficial. Recurrence, invasion and death are rare but have been reported[4].

Single instillation of intravesical treatment can be performed for tumors suspicious for lamina propria invasion. Bladder epithelial tumor is very rare in childhood, therefore no consensus has been reached for the appropriate agent and dosage for children. Single dose of epirubicin given intravesically immediately after tumor resection is effective in preventing tumor recurrence[5]. The most frequent local side-effects of epirubicin were reported as chemical cystitis and bladder irritability (popert). Because Popert RJ et al showed that side-effects were minimal at low dosages of epirubicin, we used low dosage (30 mg) of epirubicin[6]. No side-effect was seen in this patient.

Majority of cases in childhood have low recurrence rate. Recommended follow up schedule for these patients is 5 years, because the recurrences were seen within 5 years. Routine cystoscopic follow up at 3 month intervals for first year should be performed. As a contrary study, Hoenig DM et al reported that follow up method for transitional cell carcinoma of the bladder in children presents a challenge, because cystoscopy requires general anesthesia in this age group. They suggested that bladder ultrasound is extremely sensitive in identifying lesions, and it may be a valuable and minimally invasive follow-up procedure[7].

Linn et al studied the records of 73 patients with bladder tumor under 30 years of age and reported immunohistochemical evidence of p53 gene overexpression in the majority of cases, regardless of stage[8]. Studies investigating the relationship between p53 immunostaining and recurrence have given conflicting results for superficial bladder cancer. Ikegami et al suggested that the immunohistochemical study of p53 overexpression is a useful predictor for tumor recurrence and prognosis in patients with grade 3 superficial bladder tumor[9]. In another study of 58 cases, the expression of p53 did not seem to offer any prognostic information in predicting recurrence or progression

over the currently used prognostic factors[10]. In the same study Stavropoulos et al reported that, Ki-67 proliferative index has an independent validity in predicting those patients with high risk superficial bladder tumors who may recur in a short follow-up period. A similar relationship of Ki-67 overexpression with progression was not detected. As a summary, clinical significance of p53 and Ki-67 immunochemical staining remains a topic of debate. In our case immunostaining with p53 was negateve. Additionally, tumor had a Ki-67 proliferative index of %1-2. Although the tumor was reported to have lamina propria invasion, immunostaining markers were negative.

In summary, TCC of the bladder in childhood is a relatively benign lesion, and aggressive treatment is seldom needed. Even though, because anecdotal recurrences had been reported, these patients should be carefully followed up at least five years and in the first year 3-month controls are recommended with using both cystoscopy and ultrasonography.

KAYNAKLAR

1- **Javadpour N, Mostofi FK:** Primary epithelial tumors of the bladder in the first two decades of life. J Urol. 101: 706-710, 1969.

2- **Madgar I, Goldwasser B, Nativ O:** Long term follow-up of patients less than 30 years old with transitional cell carcinoma of bladder. J Urol. 139: 933-934, 1988.

3- **Wilson-Storey D, Allen AE, Variend S:** Transitional cell papillary bladder neoplasm in a girl: An unusual presentation. J Pediatr Surg. 27: 113-114, 1992.

4- **Li R, Kim K, Brendler H:** Multiple and recurrent epithelial tumors of the bladder in a child. J Urol. 108: 644-646, 1972.

5- **Liu B, Wang Z, Chen B, et al:** Randomized study of single instillation of epirubicin for superficial bladder carcinoma: Long-term clinical outcomes. Cancer Invest. 24: 160-163, 2006.

6- **Popert RJ, Goodall J, Coptcoat MJ, et al:** Superficial bladder cancer: The response of a marker tumor to a single intravesical instillation of epirubicin. Br J Urol. 74: 195-199, 1994.

7- **Hoenig DM, McRae S, Chen SC, et al:** Transitional cell carcinoma of the bladder in the pediatric patient. J Urol. 156: 203-205, 1996.

8- **Linn JF, Sesterhenn I, Mostofi FK, et al:** The molecular characteristics of bladder cancer in young patients. J Urol. 159: 1493-1496, 1998.

9- **Ikegami S, Yoshimura I, Tsuji A, et al:** Immunohistochemical study of p53 and Ki-67 overexpression in grade 3 superficial bladder tumor in relationship to tumor recurrence and prognosis. Nippon Hinyokika Gakkai Zasshi. 92: 656-665, 2001.

10- **Stavropoulos NE, Filiadis I, Ioachim E, et al:** Prognostic significance of p53, bcl-2 and Ki-67 in high risk superficial bladder cancer. Anticancer Res. 22: 3759-3760, 2002.