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Urothelial carcinoma of bladder in a pediatric patient case report of a rare disease

Erdem Aktas [a,*], Murat Ucar [a], Bahar Akkaya [b], Erol Guntekin [a], Orkun Batmaz [a]

[a] Department of Urology, Akdeniz University, Antalya, Turkey
[b] Department of Pathology, Akdeniz University, Antalya, Turkey

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ABSTRACT

Urothelial carcinoma is a very rare malignancy in the pediatric population. In spite of the extremely low amount of published cases, the incidence rate is between 0.4 and 0.1% before the age of 20. Insomuch that only less than 30 cases have been reported in the first decade. Those tumors were mostly solitary, non-invasive, with low-risk of progression and recurrence rate compared to adult-onset form. In this case report, we aim to discuss the diagnosis and treatment of a 10-year-old male patient with urothelial carcinoma of bladder who admitted to our clinic.

Introduction

A 10-year old boy admitted to our outpatient clinic with painless hematuria. Fifteen-days before his admission he fell down from a bicycle in history but his hematuria had continued. Beside intermittent exposure of cigarette smoke there is no other apparent exposure of toxins to be found in patient history. In detailed urinary ultrasonography (US) there was a non-vascular signaling, hyper echogenic solid lesion 23 × 19 × 15 mm in dimension located in posterior wall of bladder. Fig. 1 After these findings we planned cystoscopy and essential interventions under general anesthesia. Cystoscopy under general anesthesia revealed a solitary papillary tumoral lesion, 3,5 mm in diameter at the upper left lateral wall of the bladder. Tumor was resected with safe surgical margin and another sampling from the base of the lesion to demonstrate muscular invasion. Pathologic examination revealed a non-invasive papillary urothelial neoplasm of low malignant potential (Ta). Fig. 2 Thereupon, same samples are evaluated in another pathology laboratory and the diagnosis was confirmed. After the pathological diagnosis patient received a screening program. Pediatric oncology consultation is also done and they performed urinary tomography. There was no obvious pathology detected. Three months after surgery we performed a control cystoscopy and there was no recurrence.

Discussion

The Transitional Cell Carcinoma (TCC) of bladder is a very rare disease in pediatric population. Its incidence under the age of 20 is approximately 0.4% while it drops to 0.03% under 16.[1] As TCC is extremely rare in pediatric population we have very limited knowledge and observation of its behavioral patterns. Its progression is very slow and benign despite our limited guidances but we are still using adult guidelines. Therefore, all of our decisions in pediatric population are based on adult experiences. That is the main reason why we need further investigations and academic researches on pediatric urothelial carcinoma.

The main symptom of pediatric patients with TCC is painless macroscopic hematuria. But there are a lot of patients referring hospitals with widely different spectrum of complaints associated with urothelial carcinoma. Using radiological imaging methods for patient with abdominal pain, urinary tract infections, peeing and bladder dysfunctions are rare symptoms but might lead to TCC diagnosis.[2] We performed urinary ultrasonography as the first diagnostic step to determine the origin of hematuria. It's still controversial using computed Tomography as a diagnostic tool in such patients. Despite its advantages like better imaging possibilities of the urinary anatomy and upper urinary tract, it has very limited usage because of its high radiation dosage.

The main treatment method of urothelial carcinoma is transurethral resection (TUR) of suspected lesion. Low dose intravesical chemotherapy at early postoperative period is a treatment option on adult patient group but its effectiveness or use at pediatric patients is still open for further researches. Total cystectomy, partial cystectomy, intravenous-systemic chemotherapy should be reserved for patients

* Corresponding author. Department of Urology, Akdeniz University Medical Faculty, Dumlupinar Av, 07070, Antalya, Turkey.
E-mail addresses: drerdemaktas@gmail.com (E. Aktas), drmuratucar@hotmail.com (M. Ucar), bakkaya@akdeniz.edu.tr (B. Akkaya), eguntekin@akdeniz.edu.tr (E. Guntekin), orkun.batmaz@hotmail.com (O. Batmaz).

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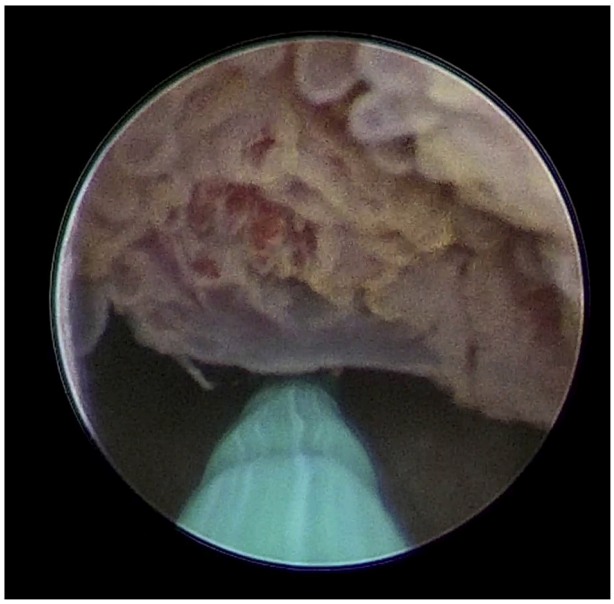

Fig. 1. Cystoscopic appearance of Tumor.

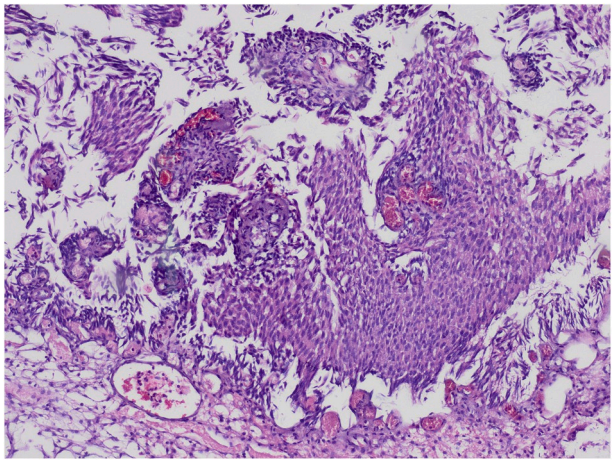

Fig. 2. Pathological evaluation of Tumor tissue at ×200 magnification.

with high grade or muscle invasive bladder cancer.

Postoperative follow up is still made by experience gathered from adult patient practice and there is a lack of practice and follow up protocols for pediatric patients. Ultrasonography is the most common imaging method of bladder. It is chosen because it's easy to repeat and non-invasive, whereas it is subjective and untrustworthy detecting small lesions. Urine cytology is also a non-invasive diagnosis and follow up phenomenon, while its sensitivity at low grade non-invasive cancer drops 6–38% is the major weakness.[3]

Another possible option for follow up is computed tomography of urinary tract, which is frequently preferred at adult patient group, found to be less sensitive in children. Therefore, it has limited use in the surveillance of TCC at pediatric patients.

Gold standard method for follow up is still Cystoscopy. Despite its disadvantages as necessity of general anesthesia and possible urethral trauma, it has been chosen by majority of Urologists as the main method. Considering the fact that two third of all recurrences are asymptomatic, cystoscopy is a reasonable choice of detecting these lesions.[4] It remains still unknown, when and how often Cystoscopy should be performed. Considering our patient, we perform the first cystoscopic control at postoperative third month. There was no tumoral recurrence to be found. Other controls are in every third month for the first two years, every 6 months for the third and fourth year and continued annually thereafter.[5]

Finally, pediatric urothelial carcinoma is a rare malignity with low incidence, recurrence rate and grade. Considering the insufficient number of pediatric cases, it is hard to define any treatment and follow up protocol. More specific guidelines should be established with the help of multi-centered further researches that reaches high number of cases.

Declaration of competing interest

The authors declare no conflict of interests.

References

1. Ucar M, Demirkaya M, Vuruskan BA, Balkan E, Kılıc N. Urothelial carcinoma of the bladder in pediatric patient: four case series of literature. *Balkan Med J*. 2018;35:268–271.
2. Pati A, Sahoo RK, Mahapatra A. Urothelial carcinoma in pedatric patient. *Indian J Surg*. June 2016;78(3):229–231.
3. Kim SC, Park S, Song SH, Kim KS, Park S. Clinicopathological characteristics of urinary bladder tumors in Korean patients 20 Year or youger. *J Kor Med Sci*. 2018 Oct. 1;33(40):e242.
4. Rodriguez A, Burday D, Sexton W, Ahmad N, Pow-Sang JM. Urothelial carcinoma in A child. *Arch Esp Urol*. 2005;58:473–475.
5. Kassouf W, Traboulsi SL, Schmitz-Dräger B, Palou J, Witjes JA, van Rhijn BWG, et al. Follow-up in non–muscle-invasive bladder cancer—international Bladder Cancer Network recommendations. *Int Bladder Canc Netw recommendations. Urologic Oncol: Semin Orig Invest*. 2016;34(10):460–468.