

Transitional Cell Carcinoma in an Iraqi Child: A Case Report

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Abstract

Transitional cell carcinoma in the first decade of life is an extremely rare complication. We present a 7 year-old Iraqi boy who attended our clinic with gross hematuria and diagnostic evaluations revealed transitional cell carcinoma (T.C.C). He underwent resection of lesion and was discharged well. We speculate on his possible exposure to ordnance from the Persian Gulf War.

Keywords: Transitional cell carcinoma; Hematuria; Children

Introduction

Transitional cell carcinoma (T.C.C) of the bladder is a rare complication in the first two decades of life [1,2]. TCC is extremely rare in childhood [3] and literature reports only 30 cases in children below 10 years of age. We present a case of TCC of the urinary bladder in an Iraqi 7 year-old boy who was referred to our institution with gross hematuria.

Case Report

In December 2006, a 7 year-old boy from Baghdad (Iraq) attended our Urology outpatient clinic, Baqiyatallah Hospital, Tehran, Iran, with gross hematuria of one month duration. Hematuria was painless and intermittent, and was accompanied by clots. The patient also had a history of dysuria, frequency and urinary retention for 1 month. Family history was unremarkable. Urine was sterile on culture. Urinary analysis showed numerous red cells. He had a mild anemia (Hb 9.0 g/dl); other laboratory test results were normal.

Abdominopelvic ultrasonography revealed a degenerated polypoid mass measuring (20 × 15 mm) on the base and left wall of the urinary

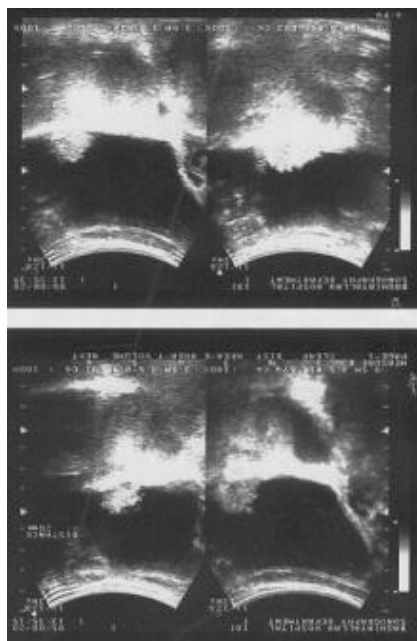


Figure 1: Ultrasonography of urinary bladder of the reported case. Tumor can be seen in the figure.

bladder (Figure 1). Cystoscopic examination done under general anesthesia, revealed a hemorrhagic and papillary mass arising from the same site. The mass was resected using a resectoscope.

Histopathologic examination of the biopsy specimen confirmed an urothelial papillary neoplasm of grade I. There was no evidence of invasion to sub mucosal and muscles in this specimen (Figure 2 and 3). The patient was discharged on the third postoperative day in good general condition.

We have no follow up data from our patient, because after the procedure, he returned back to Iraq.

Discussion

Transitional cell carcinoma of the bladder in children is rare, and malignancies of the bladder mainly are of non epithelial origin in this age group. In a survey of 10,000 patients with bladder epithelial tumors, Javadpour and Most of only found 3 cases under 15 years of age [1]. Benson and colleagues reported only 3 cases of TCC of the bladder in patients less than 10 years of age at a large referral center during a 30 year period [2].

Frequently occurring in the 6th decade of life, the incidence of epithelial bladder carcinoma has been shown to increase with patient age, but, is considered rare in patients under 30 years of age [1].

In the general population, bladder cancer is nearly three times more common in men than in women [1]. In children the male to female ratio is reported from approximately 3:1 [4] to 9:1 [5] and 39 times more common among white children than among black children [3]. The most common presentation of TCC in childhood is painless hematuria. In a report from Turkey, evaluations showed that a 13 year old boy who presented with gross hematuria after a blunt trauma had TCC tumor [8]. Some children may present irritative voiding symptoms and thus be considered as potential cases of urinary tract infection [3]. Some patients may complain urinary retention [6].

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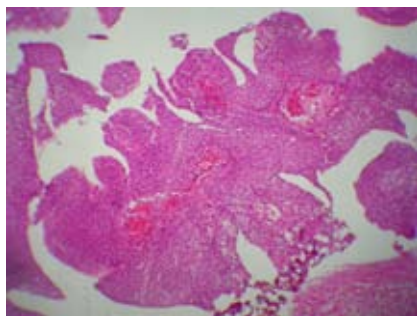


Figure 2: Papillary low-grade transitional-cell carcinoma (grade 1) in our case.

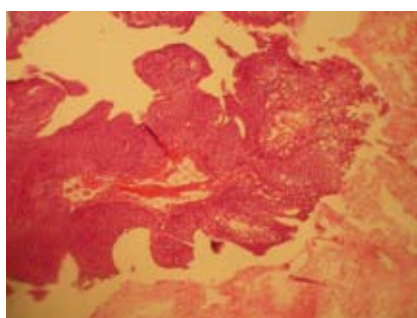


Figure 3: Papillary low-grade transitional-cell carcinoma (grade 1) in our case.

In children and adults younger than 30-40 years, bladder cancer are usually low-stage and low grade solitary tumor [1,2]. Younger patients appear to have a more favorable prognosis, because they present more commonly with superficial low grade tumors.

Cigarette and pipe smoking are well-described risk factors for bladder tumors [9,10]. Bladder cancers are also associated with a number of occupational exposures such as occupations involved in exposure to aniline dye industry, and several other aromatic amines and related compounds [11]. Other known or suspected risk factors for bladder cancer include chlorination of drinking water, arsenic, bladder infection, analgesics, hair dyes, and ionizing radiation [11].

After Persian Gulf War, Iraqi authorities claimed that patterns of cancer were changing in Iraq. A three fold increase in the incidence of leukemia and inexorable increases in the occurrence of stomach and breast tumors have been reported, particularly in the southern parts of Iraq, the major battlefields. A WHO investigation proposed that products, which were derived from depleted uranium (DU) used in piercing artillery shells, may represent a link to the observed changes in cancers epidemiology [12].

Different patterns of several types of cancers have been reported in the Persian Gulf War veterans as well [13,14]. Radiation-induced cancers also have been reported in survivors of Japanese atomic bombs [15]. Various explanations have been proposed as the rationales. Poor diets and the lack of food storage facilities [12], chemical carcinogens releasing from different bombs, and radiation by DU [13] are some of suggested explanations.

A study from Kiev, Ukraine, has reported a significant increase in the incidence of urinary bladder tumors during the 15-year period

following to the Chernobyl accident [16]. The authors of the survey concluded that early malignant transformation is taking place in the bladder urothelium of people in the radiocontaminated areas of Ukraine and that this could possibly lead sometime in the future to an increased incidence of urinary bladder cancer.

To the best of our knowledge, since now, radiation has not been proposed as a causative factor for development of transitional cell carcinomas in childhood. However, from an approximate total number of 100 reported cases of TCC of the urinary bladder in patients younger than 21, since 1950 [17], 31 cases are Japanese [4,7]. This finding can support our hypothesis that depleted uranium can promote development of TCC in childhood.

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