

# Outcome and Prognosis of Patients with Bladder Cancer below 20 Years Old

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## Abstract

**Objective:** evaluate the treatment and prognosis of the bladder mass in young patients less than 20 years old

**Patients and methods:** twenty patients with bladder tumors (papilloma and transitional cell carcinoma) 18 male and 2 female underwent this study from 2001-2011 all evaluated by abdominal ultrasound and cystoscopy.

**Results:** the age of the patients between 18 months to 20 years, 18 male and 2 female. Hematuria is presenting symptoms in 15 patients, lower abdominal pain in 3 patients and irritative voiding symptoms in 2 patients. Histopathology was papilloma in one patient transitional cell carcinoma grade I in 16 patients, grade II in 2 patients and grade III in one patient.

All patients treated by TUR of the tumor except 2 patients treated by open excision and fulguration and one patient by total cystectomy.

Follow up period between 6 months to 10 years, mortality reported in one patient only.

**Conclusion:** the bladder tumor in young patient carry good prognosis with low grade and stage at time of presentation

## Introduction

Transitional cell carcinoma of the bladder is 2.7 times more common in men than in women diagnosed at a median age of 67 to 70 years.[1,2] It rarely occur in first 2 decade of life.[1-11] Among 100 cases were reported in those younger than 20 years, it is 3 to 9 times more common in male.[11,12] The presentation of transitional carcinoma in young patients is not different from adults in their 60s and 70s.[1,11-13]. A definite etiology for tumor formation in the young is an enigma, based on the small number of cases, risk factors include older age, male sex, occupational exposure infection by schistosomiasis first hand cigarette smoking, a strong family history of transitional cell carcinoma of the bladder, and exposure to other carcinogen. [14-17]. 75% present with superficial bladder cancer and 25% with invasive bladder cancer [18,19] some contend the tumor in those who are in the first 2 decades of life are less aggressive and present at a low grade and stage and the staging depend on penetration to the bladder wall.[20-22].

The likelihood of metastasis of transitional cell carcinoma depends on the stage and the grade of the tumor not on the age of the patient. In the present case, the probability of metastasis is low. 5% of patients present with metastasis at time of diagnosis [23].

## Patients and Methods

Twenty patients with bladder tumors(papilloma and transitional cell carcinoma)18 male and 2 female age between 18 months and 20 years the study conducted in Hilla teaching hospital from2001-2011. All evaluated by abdominal ultrasound and cystoscopy with biopsy and histopathological confirmation.

The methods of treatment were transurethral resection of the tumor(TUR-BT), vesicostomy and tumor excision and cystectomy with ileal conduit..

Follow up by serial abdominal ultrasound(U/S), urine cytology and cystoscopy accordingly.

## Results

Age of the patients between 18 months and 20 years table(1). Hematuria is presenting symptoms in 15 patients, lower abdominal pain in 3 patients and irritative voiding symptoms in 2 patients table (2).Histopathology was papilloma in one patient transitional cell carcinoma grade I in 16 patients, grade II in 2 patients and grade III in one patient table (3).

All patients treated by TUR of the tumor except 2 patients treated by open excision and fulguration and one patient by total cystectomy.

Follow up period between 6 months to 10 years, mortality reported in one patient only.

## Discussion

Because of the limited number of transitional cell carcinoma cases in those under 20 years old and the varied experience among reported cases, there is controversy regarding the aggressiveness of transitional cell carcinoma in this age group compared with older patients. Some contend that tumors in those who are in the first 2 decades are less aggressive and present at a lower grade and stage, while others believe there is no difference, regardless of the age of the individual. None believe that transitional cell carcinoma is more aggressive or presents at a

higher grade or stage in the young.

In this study 16 patients had grade 1 tumor 2 patients had grade 2 one patient had grade 3 and one had papilloma, so 17 patients had low grade tumor which is consistent with study of Benson and associate evaluated 12 patients up to age 21 and also contended that transitional cell carcinoma in this population was less aggressive, typically low grade, non invasive and rarely recurrent [24].

Evaluation of the literature is particularly problematic because many investigators included patients of various ages up to age 40, made generalizations regarding transitional cell carcinoma, and applied them to all younger adults. In addition, the number of patients available for follow-up was highly variable and often too brief to make definitive conclusions

The main treatment of superficial bladder cancer is TUR, intravesical chemotherapy or BCG, photodynamic or radiotherapy [25] but in children some modification include Transurethral resection, suprapubic removal and open fulguration, and partial cystectomy have been reported as the most common therapeutic approaches for transitional cell carcinoma of the bladder in children. [26,27]

In the present study Seventeen patients treated by TUR because their age and stage were permissible and the tumor were resected totally while 2 patients treated by vesicostomy and excision of the tumor because their age 18 months and 11 years and the tumor can not be dealt by TUR.

One patient age 20 years had G3 tumor and muscle invasion underwent total cystectomy and ileal conduit.

No additive post operative treatment were required except the patient with G3 and ( T2b) deep muscle invasion treated by DXT and chemotherapy after cystectomy.

After initial treatment 50% to 70% recur in adult and 10% to 20% progress to muscle invasion [28] so There is great controversy concerning best method of surveillance after tumor removal, in this study neither recurrence nor muscle invasion occur, probably due to high percentage of low grade tumor and early management play role. Although cystoscopy highly accurate, it is subject the patients to the potential morbidity of the instrumentation and risk of anesthesia. Still, some consider cystourethroscopy mandatory.[29-31]

All our patients followed up by abdominal U/S and if its positive then cystoscopy indicated, only one patient need cystoscopy and the result were negative.

Some recommend voiding urine cytology, but recognize their limited value in identifying low grade tumors [32]. In our patients 3 of them were followed up by urine cytology and all were negative.

Bladder ultrasound and voiding cystourethrography have been recommended to reduce the frequency of cystoscopic examination, [11]but we did not use cystourethrography in follow up the patients and depend on abdominal U/S and urine cytology if positive then cystoscopy indicated.

Definite etiology for tumor formation in the young is not clear, based on small number of cases, there appear to be an association between first hand cigarette smoking, and exposure to carcinogen Benton and Henderson described 9 patients between age 17 and 25 years with transitional cell carcinoma of the bladder 6 of 9 had firsthand or second hand exposure to chemicals such as paint, solvents, cleaning solutions, resins, intermetallic compounds, glues and fuel oils [33].

In the studied patients the environmental Factors were very important since the patients residence mainly in two locality in north and south of Hilla and rare in the center, these factors may probable risk factor for patients for developing bladder cancer in these area were vulnerable to excessive explosion and to warfare chemicals this result was agreed with that of national research council(2005), who stated that recent reviews of studies of bomb survivors documented elevated risk of bladder cancer associated with ionizing radiation.

Two patients age 19,20 years had history of smoking with average cigarette smoking of 5-10 cigarette per day for period less than 2 years and it seem to be not a risk factor, in contrast to previous studies mention cigarette smoking as risk factor because our patients too young in compared to other studies and history of smoking for short period and low number of cigarette.

There was no definite history of chemical contact or positive family history for bladder cancer. .

Investigators review of the literature, among 25 transitional cell carcinoma occurring in the first decade of life, 80% presented with macroscopic hematuria and this consistent with the present study were the macroscopic hematuria occurs in 75% of the patients.

Death occur in one patient due to distant metastasis and the tumor was aggressive G3 with muscle invasion(T2b) the patient were die after 6 months after radical cystectomy.

Morbidity was very low include severe hematuria in one patient need blood transfusion and UTI in 3 patients.

Bladder cancer remains an important public health problem with no improvement in incidence or associated mortality since 1975 [34].

### Conclusions

1. In this series of patients the behaviors of the tumor were good with low morbidity and mortality.
2. Good follow up were needed.

- 3.No definite etiological factors could be identified .
- 4.Treatment is same principle of older patient except the instrumentation is not feasible for all age group.

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**Table 1** Age distribution of the patients

<b>Age of patients</b>	<b>Number of patients</b>
<b>18 months</b>	<b>1</b>
<b>11 years</b>	<b>1</b>
<b>16 years</b>	<b>3</b>
<b>17 years</b>	<b>4</b>
<b>19 years</b>	<b>8</b>
<b>20 years</b>	<b>3</b>

**Table 2** Symptoms at time of presentation

<b>Symptoms of the patients</b>	<b>number of the patients</b>
<b>Gross hematuria</b>	<b>15</b>
<b>Suprapubic pain</b>	<b>3</b>
<b>Irritative Voiding symptoms</b>	<b>2</b>

**Table 3** grade of the tumor

<b>Grade</b>	<b>Number of the patients</b>
<b>Papilloma</b>	<b>1</b>
<b>Grade 1</b>	<b>16</b>
<b>Grade 2</b>	<b>2</b>
<b>Grade 3</b>	<b>1</b>

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