

Bladder tumours in children: an interesting case report of TCC with a partial inverted growth pattern

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DISCUSSION

Primary benign or malignant bladder epithelial tumors are uncommon in childhood (2).

No consensus has been reached for the appropriate treatment and follow-up of transitional cell carcinoma (TCC) of the bladder in children,

because it is very rare in this age group. A review of 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%) (10). 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.

However, *Paduano and Chiella* (11) reported recurrence of bladder tumours in 2 of 3 patients who were asymptomatic, with recurrence noted only at cystoscopy.

In the presence of gross haematuria, a urinary tract ultrasound is the first work-up for establishing the diagnosis of bladder tumour.

Although it cannot replace cystoscopy, it is a reliable diagnostic tool for the detection of bladder tumour especially for those young patients who hesitate to undergo a diagnostic cystoscopy.

Anyway, even if according to some authors cystoscopy requires general anaesthesia in children, we think that a local anaesthesia can be enough in most cases and such exam is rather the preferred and most secure of follow-up procedure.

Actually many reports exist regarding clinical characteristics and treatment for TCC of urinary bladder in children and there is still much debate regarding clinical progression and prognosis. While some groups observed similar patterns of clinical behaviour and prognosis for bladder cancer in young and older patients (12), other investigators reported lower rates of recurrence and progression and better survival in younger patients (13, 14). Comparative data of the larger series in the literature of young adults with bladder cancer, regarding recurrence and progression, are presented in Table 1.

The study of *Nomikos et al.* (15) adds to the growing evidence of the literature that patients under 40 years old usually present with low-stage and low-grade bladder cancer; according to their study clinical behaviour of high stage and high-grade disease seems to be similar to older people and those patients should be managed aggressively especially when unfavourable prognostic factors coexist such as multi-focality, high grade and stage, and tumours > 3 cm.

An interesting finding of the study of *Nomikos et al.* was the significant delay of approximately 80 days from the onset of symptoms till diagnosis established by ultrasound.

This seems to be common in younger patients due to low incidence of bladder cancer in this age group and the predominance of benign causes of haematuria in this age group causing hesitancy for an aggressive work-up.

Table 1.

Comparative data of young patients with bladder cancer about recurrence and progression.

Authors	Number of patients	Median followup (months)	Superficial bladder cancer (%)	Invasive bladder cancer (%)	Recurrence rates (%)	Progression invasive bladder cancer (%)
<i>Wen et al. (9)</i>	30	72.8	76.6	23.4	50	8.3
<i>Yossepowitch and Dalbagni (22)</i>	74	28.1	83.4	16.6	38.7	16
<i>Erozenci et al. (18)</i>	156	87	89.1	10.9	48.7	22.8
<i>Perez et al. (17)</i>	30	66	67.6	23.3	32	0.1

No conflict of interest declared.

Studying the molecular characteristics of bladder tumours removed from patients younger than 30 years old, Linn et al.(16) reported immunohistochemical evidence of p53 gene product overexpression in 67% of their cases, regardless of stage. However, different studies investigating the relationship between p53 expression and recurrence have given conflicting results in superficial bladder cancer and the clinical significance of p53 immunochemical staining remains a topic of debate.

Inverted papilloma of the urinary bladder has been classified as a true urothelial papillary neoplasm (17). This lesion is benign, and it represents less than 1% of transitional cell neoplasms. It is commonly seen in the adult population (mean age, 55 years) with a male to female ratio of 4:1. Most patients present with haematuria or irritative bladder symptoms. The aetiology of this lesion is uncertain. Although the lesion is benign, rare cases of malignant transformation have been reported, including a case in the renal pelvis (18-19). Recurrence of inverted papilloma also has been reported.

The current belief is that cases reported as malignant transformation of inverted papilloma into transitional cell carcinoma are more likely transitional cell carcinomas with endophytic growth patterns (20). This makes it difficult to arrive at a precise diagnosis and to assess invasion. There is lack of consistency regarding the histologic criteria in the cases of inverted papilloma reported in the literature, making it difficult to predict the biological potential behaviour of this lesion. Henderson et al suggested the following histologic characteristics to make the diagnosis of inverted papilloma of the urinary bladder (21): 1 - inverted architecture similar to inverted papilloma of the upper respiratory tract, 2 - normal urothelial lining, 3 - uniformity of urothelial cells, 4 - microcyst formation, 5 - absent or infrequent mitosis, 6 - squamous metaplasia. Our case shows just some of the histologic criteria and patterns described to be diagnosed as inverted papilloma, in particular points 4, 5 and 6 are not matched. We have not then clear data to support if this kind of lesion would recur as an inverted papilloma or as a transitional cell carcinoma.

Anyway although the vast majority of bladder TCC cases

reported in young patients have had low recurrence and have been non-invasive 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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