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REVIEW

Urothelial bladder tumour in childhood: A report of two cases and a review

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KEYWORDS

Urothelial;
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ABBREVIATIONS

US, ultrasonography;
PUNLMP, papillary urothelial neoplasm of low malignant potential;
UC, urothelial carcinoma;
TURBT, transurethral resection of the bladder tumour;
SEER, surveillance, epidemiology end results

Abstract Urothelial bladder tumour in childhood is extremely rare, and almost all the reported cases have been low-grade tumours with a favourable outcome. Here we review 57 reports comprising 127 cases, and we report two new cases.

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Introduction

Urothelial bladder tumour in childhood is extremely rare [1]. Deming (cited in [2]) reported the first such case, in a patient aged <10 years, in 1924. In 1969, Javadpour

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Table 1 A review of the 127 cases: All the studies were of level of evidence 5.

Ref.	Cases/sex	Age (years)	Cell type	Treatment	Outcome
[1]	1/M	4	High-grade (grade 3), muscle-invasive Papillary UC, stage T2b	TURBT, R after 3 months, Partial cystectomy + chemo	NR at 6 months
[2]	6/4M/2F	6–17	Grade I TCC	TURBT	NR
[3]	8/6M/2F	< 18	Two G1Ta, 1 G1T1, 1 G2T1, and 5 G2Ta	TURBT	NR 8–27 years
[4]	1/M	10	Grade I well-differentiated	TURBT	Pending
[5]	12/M	< 21	Low-grade/low-stage	TURBT	1 patient had 1 R
[6]	1/F	9	Grade 1 TCC	TURBT	N/A
[7]	5/M	11–18	Low-grade	TURBT	N/A
[8]	7/M + F	< 16	Low-grade	TURBT	NR after 18 months
[9]	1/M	5	High-grade	Partial cystectomy	NR after 1 year
[10]	1/F	16	High-grade invasive TCC	Radio- and chemotherapy	Died from metastatic disease
[12]	1/F	9	Low-grade	TURBT	NR in 4 years
[13]	2/M/F	15/18	Superficial TCC	TURBT	N/A
[14]	2/F	8/9	Grade 1 stage pTa	TURBT	NR in 4 years
[15]	1/F	12	Superficial TCC	TURBT	N/A
[16]	1/M	10	Grade 2 TCC with lamina propria invasion	TURBT + Mitomycin	N/A
[17]	1/F	10	PUNLMP	TURBT	NR in 9 months
[18]	23/19M/4F	4–20	2 papilloma, 10 PUNLMP, 8 low grade, 3 high grade	TURBT	3 R in 13 years
[19]	1/M	12	Ta grade II	TURBT	NR in 2 months
[20]	1/M	13	Low grade	TURBT	N/A
[21]	1/F	10	Grade I papillary TCC	TURBT	R in 2 years
[22]	1/M	18	Grade 1 TCC	TURBT	NR in 2 years
[24]	2/M	< 20	Grade 1 and 2	TURBT	N/A
[25]	1/M	8	Grade I superficial (pTa)	TURBT	NR in 5 years
[26]	2/M	< 10	Low-grade	TURBT	N/A
[27]	6/4M/2F	10–22	Low-grade and low-stage	TURBT	N/A
[28]	1/M	8	Papillary TCC with lymphangiectasia	TURBT	N/A
[29]	1/M	11	Low-grade	TURBT	N/A
[30]	1/M	13	Low-grade	TURBT	N/A
[32]	1/F	8	Grade 1 TCC	TURBT	N/A
[33]	7/M	< 20	Low-grade	TURBT	NR
[34]	1/M	14	Papillary noninvasive TCC	TURBT	N/A
[35]	3/M	< 18	Low-grade	TURBT	Two R
[37]	1/M	< 18	Grade II to III + submucosal invasion	TURBT	NR in 30 months
[38]	1/F	10	Papillary carcinoma	TURBT	N/A
[40]	1/M	16	Grade I–II	TURBT	NR in 2 years
[41]	2/M	2–3	Papillary epithelial tumours	TURBT	N/A
[45]	1/M	11	Papillary TCC	TURBT	N/A
[46]	8/5M/3F	10–20	Low-grade	TURBT	NR in 7 years
[47]	1/M	< 18	Low-grade	TURBT	N/A
[50]	1/M	10	Grade 1, noninvasive TCC	TURBT	NR in 2 years
[52]	2/M	< 18	Low-grade	TURBT	1 R
[53]	4/2F/2M	2–18	Low-grade TCC	TURBT	NR at 3/6/4/1.5 years
[54]	1/F	16	Papillary TCC, grade I/Costello syndrome	TURBT	NR in 2 years
Present	2/M	5–12	Low-grade, 1 PUNLMP	TURBT	NR in 3 years

NR, no recurrence; R, recurrence; N/A, not available.
PUNLMP cases before 2004 were excluded.
No abstract available in [39] (two cases), [43] (one case) and [44] (one case).
Some references were reviews or analysis without reporting the number of cases.

and Mostofi [2] identified 40 primary epithelial bladder tumours in the first two decades of life from 10,000 total cases.

A more recent review of previous reports identified 125 patients who were aged < 20 years, of whom only 20 were aged < 10 years [3], and the origin of such cases was mesodermal; reports on this topic are very limited. These tumours have been shown to have a low grade of malignancy, showing little tendency to recur [4], and have a good prognosis. Here we review previous cases and report two new cases of urothelial bladder tumour.

Methods

We reviewed the databases of PubMed and Hinari for reports in English, searched using the keywords 'bladder', 'transitional cell carcinoma' and 'children'. We