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Low-Grade Papillary Urothelial Carcinoma of the Bladder in a 12-Year-Old Child: First Case Report from Gabon

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Abstract

Background: Bladder tumors are rare in children. Their clinical manifestations are similar to those found in adults. Only pathological examination of the lesion can confirm the diagnosis. **Case Presentation:** We report the first case of bladder urothelial carcinoma in Gabon in a 12-year-old child, revealed by terminal, then total, hematuria, without anemia. The history revealed no evidence of exposure to secondhand smoke or urinary schistosomiasis. Ultrasound and cystoscopic examinations concluded that it was a polypoid lesion of the left lateral bladder wall. **Procedure:** We performed endoscopic resection of the tumor, and pathological examination revealed a squamous cell carcinoma. **Outcomes:** The postoperative course was uneventful, and cystoscopic follow-ups at 3, 6, and 9 months were normal. **Conclusion:** Bladder tumors in children are revealed by hematuria and endoscopic resection is the rule and constitutes the first treatment.

Keywords

Cancer, Bladder, Child, Gabon

1. Introduction

Urothelial tumors develop from transitional mesodermal cells that line the urinary

tract. They are common in adults over the age of 60 and are exceptional in pediatric patients. They are characterized by their low grade, low aggressiveness, and progression [1] [2]. The etiological factors of this uropediatrical pathology are still undetermined, and the therapeutic protocols of various learned societies do not yet take these specific cases into account [3] [4].

We report the first case of bladder urothelial carcinoma in Gabon in a 12-year-old child. The aim of this study was to present the medical observation of the case and to review the literature on the subject.

2. Case Presentation

A 12-year-old child, A.M.M.A., with no relevant medical history, including schistosomiasis and passive smoking, was seen in consultation in November 2020 for episodes of total and isolated hematuria, of sudden onset without any evidence of trauma, evolving over the past two months.

The physical examination was poor, with a good general condition. Biology revealed a hemoglobin level of 12.2 g/dL, a cytobacteriological examination of the urine without pus or germs, and a urinary search for Schistosoma haematobium eggs, which was negative. Regarding imaging, an ultrasound of the urinary tract was performed, which revealed a unifocal, polypoid, fringed bladder mass on the left lateral wall (**Figure 1**).

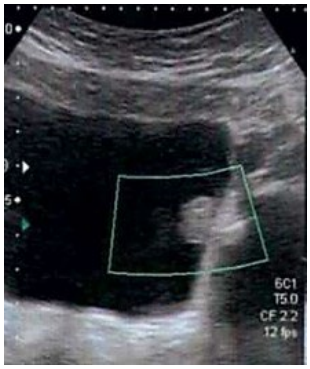


Figure 1. Polypoid tumor of the left lateral aspect of the bladder on ultrasound.

2.1. Procedure

Bladder endoscopy with pediatric equipment confirmed the pedunculated polypoid lesion of the left bladder horn, measuring approximately 25 mm on its long axis (**Figures 2-4**). This lesion was resected endoscopically with a Ch8 resectoscope under general anesthesia.

2.2. Outcomes

The anatomopathological examination of the resection chips (histopathology with immunohistochemical study using anti-GATA3, anti-cytokeratin 5/6, and anti-cytokeratin 20 antibodies) concluded that the patient had a low-grade (G1/G2)

pTa stage papillary urothelial carcinoma with squamous cell metaplasia (Figure 5).

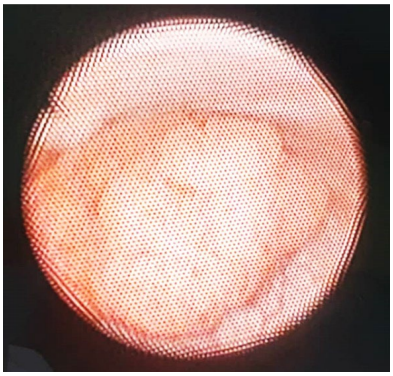


Figure 2. Polypoid tumor of the left lateral aspect of the bladder on cystoscopy.

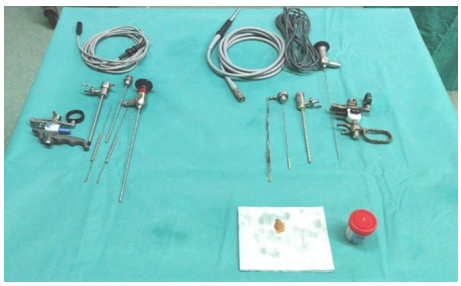


Figure 3. Pediatric endoscopy equipment used for tumor resection.

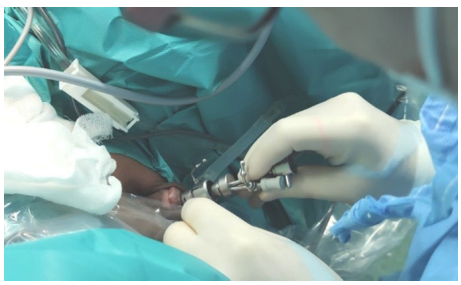
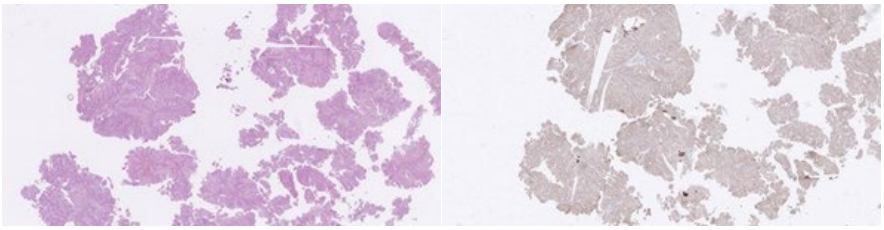


Figure 4. Pediatric cystoscopy technique in children.



(a) (b)

Figure 5. Histology of bladder tumor on anatopathological examination: squamous cell carcinoma.

The postoperative course was favorable, with an uneventful follow-up.

The first cystoscopic follow-up performed at the third postoperative month was normal, as were those at the 6th and 9th months.

3. Discussion

Urothelial tumors are very rare in children [5]. Transitional cell carcinoma of the bladder during the first two decades of life is very rare and poorly characterized. The incidence of tumors is 0.4% in individuals under 20 years of age and 0.03% in those under 16 years of age [5]. Only isolated cases are reported in the literature. The largest pediatric series of bladder tumors is the Surveillance Epidemiology and End Results (SEER) series, which included 140 cases [6] [7].

The sex ratio in the literature varies from 2:1 to 4:1 [6]. This clear male predominance does not yet have a well-structured rationale.

Risk factors are not well defined, as is the case in adults. Several hypotheses give rise to reflections in the literature: exposure to toxic substances (passive smoking and drug and environmental carcinogens), genetic background, tumor history, history of kidney transplantation, history of chronic infection of the lower urinary tract, and neurological bladders [1]. Bilharzia should not be excluded from these hypotheses because it constitutes the main source of bladder tumors in Africa, with the histological particularity of squamous cell carcinomas [8].

In our case, the patient was a 12-year-old boy with no history of passive smoking or of living in a schistosomiasis epidemic area.

As in our case, macroscopic hematuria is the primary symptom, with ultrasound confirmation of the bladder mass. Associated signs, often related to the local repercussions of the bladder mass, are abdominal pain and urinary disturbances, which can progress to complete bladder retention [9] [10].

Diagnostic delay is common and can extend to more than a month due to the unusual nature of bladder tumors in children. A urinary tract infection may be associated. In Hoenig's series, the circumstances of discovery were macroscopic hematuria in 80% of cases, signs of bladder irritation in 15% of cases, and microscopic hematuria in 5% of cases [11].

Any discovery of an abnormality on ultrasound should lead to cystoscopy with primary resection of the bladder tumor under general anesthesia for three diagnostic, prognostic, and therapeutic objectives. These are often unifocal lesions. Park reported 94% of single lesions in his series, and Fine reported 100% of unifocal lesions [12] [13].

The prognosis often depends on the initial histology of the lesion. In children, urothelial tumors are often non-invasive and have an excellent prognosis [1]. Recurrences are rare before the age of 20 and were found in proportions of 0% in the Bujons series, 8% in the Di Carlo series, and 10% in the Fine series [13]-[15].

From a therapeutic point of view, endoscopic resection of the bladder tumor with anatomopathological examination of the resection chips is essential, and very often constitutes the main part of the treatment [1].

Some rare cases of high-grade tumors exceptionally require a partial cystectomy of the tumor area as well as complementary treatments: intravesical instillations of BCG, Mitomycin, or MVAC (Methotrexate, Vinblastine, Adriamycin, Cisplatin), based on the adult protocol [13] [16]-[23].

Thus managed, the surveillance of these children is carried out as in adults.

- For low-risk tumors (TaG1, PUNLMP): Ultrasound and cystoscopy at 3 months and 9 months after the first resection, then ultrasound every 6 months and cystoscopy once a year. This surveillance is extended for 5 years.
- For high-risk tumors (T1G1): Cystoscopy at 3 - 6 - 12 months for the first year, then cystoscopy every 6 months for life [17] [18].

The histology of the resected tumor in our young patient revealed a low-grade lesion, and he is currently under cystoscopic surveillance, with a normal initial post-tumor resection follow-up.

4. Conclusion

Urothelial tumors are very rare in children. Any macroscopic hematuria in a child should raise suspicion in the absence of an obvious etiological factor such as trauma, lithiasis, or chronic cystitis. Initial endoscopic resection of the lesion is often the definitive treatment. Often low-grade histologically, their prognosis is good, and the progression is recurrence-free except in cases of high-grade tumors requiring regular monitoring.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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