

# Health Sciences



U M 6 S S  
EDITIONS

---

Volume 3 | Issue 1

Article 2

---

## Bladder Tumor in a Young Leukemic Patient Cured by Chemotherapy: A Case Report

Mohamed Tebaa

*Cadi Ayad University, Marrakech , Morocco*

Mamoutou Dit Mody

*Cadi Ayad University, Marrakech , Morocco*

Sylla Mahamadou

*Cadi Ayad University, Marrakech , Morocco*

Mohamed Amine Lakmichi

*Cadi Ayad University, Marrakech , Morocco*

Follow this and additional works at: <https://journal.um6ss.ma/health-sciences>



Part of the [Biomedical Engineering and Bioengineering Commons](#), [Dentistry Commons](#), [Nursing Commons](#), [Pharmacy and Pharmaceutical Sciences Commons](#), and the [Public Health Commons](#)

---

### Recommended Citation

Tebaa, Mohamed; Mody, Mamoutou Dit; Mahamadou, Sylla; and Lakmichi, Mohamed Amine (2022) "Bladder Tumor in a Young Leukemic Patient Cured by Chemotherapy: A Case Report," *Health Sciences*: Vol. 3: Iss. 1, Article 2.

Available at: <https://doi.org/10.15342/hs.2022.581>

This Case Report is brought to you for free and open access by Health Sciences. It has been accepted for inclusion in Health Sciences by an authorized editor of Health Sciences.

## CASE REPORT

# Bladder Tumor in a Young Leukemic Patient Cured by Chemotherapy: A Case Report

Mohamed Tebaa , Mamoutou Dit Mody, Sylla Mahamadou, Mohamed Amine Lakmichi, Zakaria Dahami, Said Mohammed Moudouni, Ismail Sarf

Arrazi Urology Department, CHU Mohammed VI, Faculty of Medicine and Pharmacy, Cadi Ayad University, Marrakech , Morocco.

### ABSTRACT



Adult bladder tumor is estimated to be the 10th most common tumor worldwide. However, its incidence is much less common in children. It is a disease of the elderly that peaks in the sixth decade of life. Nevertheless, bladder tumors could also affect children, adolescents, and young adults with a prevalence of <1% in the first four decades of life. Ethiopathogenically and epidemiologically, the frequent association with congenital malformations can also explain the occurrence of bladder tumors by the cytotoxic action of chemotherapy treatment in the context of hematological malignancies in children. Most bladder neoplasms are surgically resected. Cystoscopy, if possible with biopsy, confirms the diagnosis of anatomy pathology.

**KEYWORDS:** Bladder tumor, Child, Leukemia, chemotherapy.

**Correspondence:** Dr. Tebaa Mohamed, Arrazi Urology Department, CHU Mohammed VI, Faculty of Medicine and Pharmacy, Cadi Ayad University, Marrakech , Morocco. Email: [mohamed.tebaa@edu.uca.ac.ma](mailto:mohamed.tebaa@edu.uca.ac.ma)  
**Copyright** © 2022 Tebaa M et al. This is an open access article distributed under the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

### INTRODUCTION

Bladder cancer (BC) is the most common malignancy of the urinary tract. Bladder cancer is the 10th most common form of cancer in the world, with about 549,000 new cases and it is more common in men than in women, with respective incidence and mortality rates of 9.6 and 3.2 per 100,000 in men: about 4 times those of women worldwide [1,2].

It is a disease of the elderly that peaks in the sixth decade of life. Nevertheless, bladder tumor could also affect children, adolescents and young adults with a prevalence of <1% in the first 4 decades of life [3,4]. Unlike adults, few predisposing factors are identified in children [5].

### MATERIALS AND METHODS

A Moroccan male aged 27 years old with a history of acute myeloid leukemia which was treated and cured by chemotherapy at the age of 9. His bladder tumor was discovered at the age of 13 by hematuria, confirmed by a trans-urethral resection of the bladder. Pathology result spoke of papillary urothelial neoplasia. Admitted in 2018 for total clotting hematuria and the rest of the examination was unremarkable. In front of this symptomatology, we asked for an ultrasound completed by a uroscanner and a cystoscopy.

Ultrasound: Vascularized endoluminal budding process located at the base of the bladder lateralized to the left measuring 40x20x17 mm

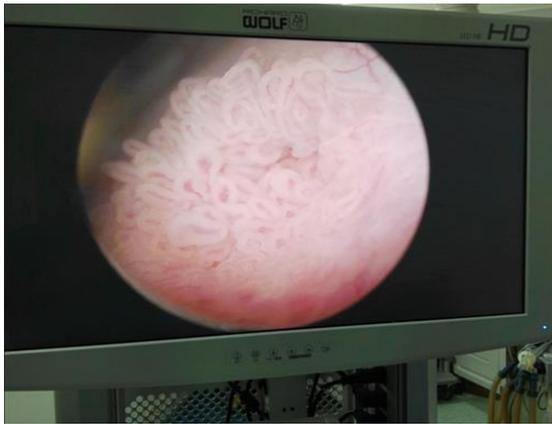
Uroscanner: Bladder lesion process, at the level of the postero-lateral wall on the left measuring 50x30 mm without any impact on the upper urinary tract, nor local or distant infiltration (Figure 1).



**Figure 1:** Bladder lesion process, at the level of the postero-lateral wall on the left of 50x30 mm.

During surgery:

- Exploration: urethra and neck not invaded, Bladder: right meatus seen, left meatus seen 2 processes at the level of the left lateral wall and the fundus measuring respectively 20 and 10 mm (Figure 2).
- Procedure: complete and deep RTUTV.



**Figure 2:** Cystoscopic image of a urothelial-like process of the left lateral wall.

Postoperative follow-up is simple. Bladder catheterization and irrigation: urine clearing is obtained at the third day. Anatomopathology result found papillary urothelial neoplasia of low malignancy potential.

Patient received 18 sessions of BCG therapy. Cystoscopy of control post BCG protocol (18 sessions): no tumor recurrence.

## DISCUSSION

The frequency of occurrence of second tumors can be globally estimated at less than 5% of treated patients. However, it is influenced by the nature of the primary tumor, age, the cumulative dose of drugs received, and the association with radiotherapy [10].

Cytotoxic agents implicated in the development of a second tumor are those whose mechanism of action involves an interaction with DNA, mainly alkylating agents (melphalan, cyclophosphamide), and topoisomerase II inhibitors (etoposide, anthracyclines) [10].

A history of chemotherapy is associated with a fourfold increased risk of bladder tumor, especially in cases of familial retinoblastoma, cyclophosphamide exposure, or pelvic irradiation. In a pediatric series of 12 cases, Di Carlo found two cases of tumor history: an immature ovarian teratoma surgically treated two years before and a rhabdoid tumor irradiated 8 years before [11].

The most frequent urinary signs are: frequent and recurrent urinary infections, total clotting hematuria and acute or subacute retention of urine which would almost always be the first clinical sign rarely is the discovery of a suprapubic mass corresponding to a vesical globe [12].

The clinical examination is usually normal, rarely it is the discovery of a suprapubic mass corresponding to a bladder globe or to the tumor itself.

This is the first-line examination because of its safety and ease of performance. Ultrasound can, if performed under good conditions, show a thickening of the bladder wall or an intra-vesical process.

Imaging can also show intra-vesical extension, mainly in the form of intra-vesical buds. It is important to note the invasion of different parts of the bladder, trigone, lateral faces, dome, ureters. The appearance may be in the form of true intravesical buds or vegetations but also a simple thickening of the walls [13,14]. Other radiological

examinations, in particular CT or MRI, are never performed in the first instance, but only as part of the assessment of an invasive tumor and also to look for possible invasion of deep lymph nodes, especially lumbar and pelvic lymph nodes and liver metastases [15].

The diagnosis of certainty can only be obtained by histopathological examination of a tissue sample. In addition to the clinical and radiological evidence, the essential step in the diagnosis is the biopsy, which is essential before treatment can be considered.

It is an endoscopic examination that allows to: visualize the tumor(s) and specify the number, the location and the aspect of the lesions.

TURT is a first line of treatment for all possible bladder cancers. This surgery may be the only treatment needed for bladder cancer that is limited to the superficial layer of the bladder. In our case the recurrence occurred 10 years after the resection despite it was a low risk bladder tumor. The treatment includes in all cases endoscopic resection of the tumor for anatomopathological examination. This treatment is usually sufficient. In exceptional cases of high-grade tumor, partial cystectomy of the tumor area is indicated, as well as complementary treatments: intravesical instillations of BCG, Mitomycin, or MVAC (methotrexate, vinblastine, adriamycin, cisplatin), based on adult protocols. There are currently no recommendations for monitoring in children. Therefore, they are monitored according to the "adult" protocol [16-18].

Fortunately, bladder tumors are often considered superficial and low grade (I - II) with low malignant potential in children and adolescents, which was found in our patient. In the general population, characteristics associated with a higher risk of bladder cancer include male gender, being a current or former regular cigarette smoker, exposure to aromatic amines, treatment with drugs such as cyclophosphamide, and exposure to radiation from the pelvis [17,18].

The prognosis is highly dependent on the initial histology. In this age group, urothelial tumors are most often non-invasive, with an excellent prognosis. Recurrences are rare before the age of 20 years. Nevertheless, survival was 100% after 4.5 years of follow-up, without progressive disease. This frequency increases in parallel with the increase in the frequency of high-grade and high-stage stages. Invasive tumors are very rare in children, but are possible and their prognosis is close to that of adults. We can cite the cases of Neogi [17] (high grade carcinoma infiltrating the muscle in a 4 year old child, which evolved favorably after partial cystectomy. The overall prognosis is excellent with a very low mortality: 0% in the review by Di Carlo [11].

## CONCLUSION

Bladder tumors in children are rare, its diagnosis should be suspected in children with obstructive lower urinary tract syndrome associated or not with hematuria and/or infection with imaging data, and cystoscopy if possible with biopsy confirms the diagnosis on pathology. Younger patients with epithelial neoplasms tend to have low stage, low grade tumors and a lower recurrence rate and most neoplasms have been surgically resected.

**ACKNOWLEDGMENTS**

None.

**AUTHORS' CONTRIBUTIONS**

The participation of each author corresponds to the criteria of authorship and contributorship emphasized in the [Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals of the International Committee of Medical Journal Editors](#). Indeed, all the authors have actively participated in the redaction, the revision of the manuscript, and provided approval for this final revised version.

**REFERENCES**

- [1] Ferlay J, Soerjomataram I, Dikshit R, Eser S, Mathers C, Rebelo M, et al. Incidence et mortalité du cancer dans le monde: base de données sur le cancer du CIRC n ° 11. *Int J Cancer*. 2015 Mar 1;136(5):E359-86. DOI: [10.1002/ijc.29210](#)
- [2] Bray F, Ren JS, Masuyer E, Ferlay J. Estimations mondiales de la prévalence du cancer pour 27 sites dans la population adulte en 2008. *Int J Cancer*. 2013 Mar 1; 132(5) : 1133–45. DOI: [10.1002/ijc.27711](#)
- [3] Lerena J, Krauel L, Garcia-Aparicio L, Vallasciani S, Sunol M, Rodo J. Transitional cell carcinoma of the bladder in children and adolescents: six-case series and review of the literature. *J Pediatr Urol*. 2010Oct;6(5):481–5. DOI: [10.1016/j.jpuro.2009.11.006](#)
- [4] Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Waldron W, et al. SEER Cancer Statistics Review, 1975-2008. Bethesda, MD: Institut national du cancer; 1975-2008. [Accessed 2022 Jan 12]. Available from : [https://hero.epa.gov/hero/index.cfm/reference/details/reference\\_id/730406v](https://hero.epa.gov/hero/index.cfm/reference/details/reference_id/730406v)
- [5] Wen YC, Kuo JY, Chen KK, Lin AT, Chang YH, Hsu YS, et al. Carcinome urothélial de la vessie chez les jeunes adultes - Expérience clinique à l'hôpital général des vétérans de Taipei. *J Chin Med Assoc*. 2005 Jun; 68(6) : 272–5. DOI: [10.1016/s1726-4901\(09\)70149-2](#)
- [6] Hurria A, Togawa K, Mohile SG, Owusu C, Klepin HD, Gross CP, et al. Predicting chemotherapy toxicity in older adults with cancer: a prospective multicenter study. *J Clin Oncol*. 2011 Sep 1; 29(25):3457-65. DOI: [10.1200/jco.2011.34.7625](#)
- [7] Apostolidou E, Cortes J, Tsimberidou A, Estey E, Kantarjian H, Giles FJ. Pilot study of gemtuzumab ozogamicin, liposomal daunorubicin, cytarabine and cyclosporine regimen in patients with refractory acute myelogenous leukemia. *Leuk Res*. 2003 Oct; 27(10):887-91. DOI: [10.1016/s0145-2126\(03\)00021-3](#)
- [8] Cortes J, Tsimberidou AM, Alvarez R, Thomas D, Beran M, Kantarjian H, et al. Mylotarg combined with topotecan and cytarabine in patients with refractory acute myelogenous leukemia. *Cancer Chemother Pharmacol*. 2002 Dec; 50(6):497-500. DOI: [10.1007/s00280-002-0539-y](#)
- [9] Estey EH, Thall PF, Giles FJ, Wang XM, Cortes JE, Beran M, et al. Gemtuzumab ozogamicin with or without interleukin 11 in patients 65 years of age or older with untreated acute myeloid leukemia and high-risk myelodysplastic syndrome : comparison with idarubicin plus continuous-infusion, high-dose cytosine arabinoside. *Blood*. 2002 Jun 15;99(12):4343-9. DOI: [10.1182/blood.v99.12.4343](#)
- [10] Zwaan CM, Reinhardt D, Corbacioglu S, van Wering ER, Bökkerink JP, Tissing WJ, et al. Gemtuzumab ozogamicin: first clinical experiences in children with relapsed/refractory acute myeloid leukemia treated on compassionate-use basis. *Blood*. 2003 May 15; 101(10):3868-71. DOI: [10.1182/blood-2002-07-1947](#)
- [11] Di Carlo D, Ferrari A, Perruccio K, D'Angelo P, Fagnani AM, Cecchetto G, et al. Management and follow-up of urothelial neoplasms of the bladder in children: a report from the TREP project. *Pediatr Blood Cancer*. 2015 Jun; 62(6):1000-3. DOI: [10.1002/pbc.25380](#)
- [12] Akele-Akpo MT, Hounasso PP, Akpo C, Deminière C. [Embryonal botryoid rhabdomyosarcoma of the bladder]. *Ann Pathol*. 2002 Jun; 22(3):210-4.
- [13] Philippe-Chomette P, Orbach D, Brisse H, Aigrain Y, Berrebi D, El Ghoneimi A. Cancer du sinus urogénital de l'enfant. *Ann Urol (paris)*. 2006 Oct ;40(5): 280–296. DOI: [10.1016/j.anuro.2006.08.002](#)
- [14] Philippe-Chomette P, Orbach D, Brisse H, Aigrain Y, Berrebi D, El Ghoneimi A. Cancer du sinus urogénital de l'enfant. *Ann Urol (paris)*. 2006 Oct ;40(5): 280–296. DOI: [10.1016/j.anuro.2006.08.002](#)
- [15] Korreect GS, Minevich EA, Sivan B. High-grade transitional cell carcinoma of the pediatric bladder. *J Pediatr Urol*. 2012 Jun; 8(3):e36–8. DOI: [10.1016/j.jpuro.2011.10.024](#)
- [16] Paner GP, Zehnder PL, Amin AM, Husain AN, Desai MM. Urothelial neoplasms of the urinary bladder occurring in young adult and pediatric patients: a comprehensive review of literature with implications for patient management. *Adv Anat Pathol*. 2011 Jan; 18(1):79-89. DOI: [10.1097/pap.0b013e318204c0cf](#)
- [17] Neogi S, Kariholu PL, Dhakre G, Gupta V, Agarwal N, Bhadani P. Malignant urothelial carcinoma of urinary bladder in a young child: a rare case report. *Urology*. 2013 Apr; 81(4):888– 90. DOI: [10.1016/j.urology.2012.12.016](#)
- [18] Korreect GS, Minevich EA, Sivan B. High-grade transitional cell carcinoma of the pediatric bladder. *J Pediatr Urol*. 2012 Jun;8(3):e36–8. DOI: [10.1016/j.jpuro.2011.10.024](#)

**COMPETING INTERESTS**

The authors declare no competing interests with this case.

**FUNDING SOURCES**

None.

**PATIENT CONSENT**

Written informed consent was obtained from the patient for the publication of this case report.