



Oncology

Testicular metastasis of urothelial carcinoma simulating testicular cancer: A rare case report

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ABSTRACT

Metastatic cancers of the testis are rare. Metastatic disease in the testis from urothelial carcinoma is extremely rare. Usually, metastatic testicular cancers are from primitive prostate, lung, and gastrointestinal tumors.

Testicular metastases from urothelial carcinoma should be suspected in patients with hematuria and testicular swelling.

1. Introduction

Every year, 2.7 million people worldwide are diagnosed and treated for bladder cancer, and the majority of these occur after the age of 60. Bladder cancer is the second most common urologic cancer after prostate cancer.

Hematuria is the most frequent sign, together with cystoscopy, urine cytology is one of the reference examinations for the detection of bladder cancer. Testicular metastases are rare. The most common primary tumors are tumors of the lungs, gastrointestinal tract and prostate, these cancers are discovered fortuitously in orchidectomy or autopsy samples.¹ We report in this work a rare case of testicular metastasis from urothelial carcinoma with a literature review.

2. Case report

A 70-year-old man, chronic smoker, consulted for macroscopic hematuria and swelling of the left testicle, with no other chronic disease. On physical examination, the left testicle showed a diffuse, hard, irregular, mass in the left hemiscrotum. The urine cytology was positive, the cystoscopy revealed a tumor on the left side of the bladder with an infiltrating appearance and testicular tumor markers were: human chorionic gonadotropin (HCG) < 1.2 mIU/mL (N: 0–5), alpha fetoprotein 3.52 ng/mL (N: 0–13.4) and lactate dehydrogenase 197 U/L (N: 125–243). An ultrasound was performed to determine the presence and nature of the testicular mass.

The ultrasound showed a heterogeneous mass of the left testicle

(17mm) (Fig. 1), the right testicle was without abnormality. The radiological assessment confirmed the presence of testicular cancer associated with bladder cancer.

We performed a complete transurethral resection of the bladder with

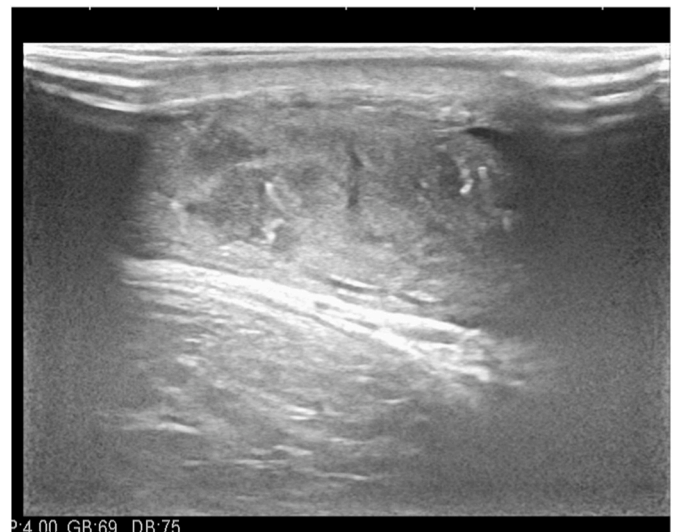


Fig. 1. Ultrasound showed a heterogeneous mass of the left testicle.

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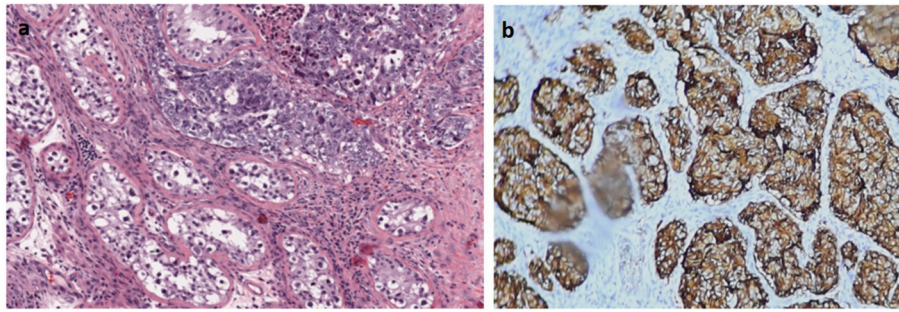


Fig. 2. (a) Histological examination of the specimen shows a proliferation of atypical cells arranged mostly in nests seen in the upper right, adjacent to normal appearing seminiferous tubules in the lower left. Tumor cells are pleomorphic containing large nuclei and scant eosinophilic cytoplasm. (b) Immunostaining shows a positivity of tumor cell for Cytokeratin.

a bladder catheter with irrigation and we performed left radical orchiectomy.

The pathologic finding of the resection was a muscle-infiltrating urothelial carcinoma (pT2a), and the pathologic finding of the left testis was a metastasis consistent with a high-grade urothelial primary, the anatomopathological examination showed a testicular metastasis of urothelial origin (Fig. 2). Metastases in the lung and iliac bone were revealed on CT scan. We planned a systemic chemotherapy regimen of gemcitabine and cisplatin.

3. Discussion

Bladder cancer is one of the most common cancers in the world. Bladder cancer is histologically classified into urothelial transitional carcinoma, squamous cell carcinoma, adenocarcinoma etc. Common sites of metastasis from urothelial carcinoma of the bladder, in descending order of frequency, are the pelvic lymph nodes, liver, lung, and bone²

In a study published in 2010, Yang et al.³ concluded that testicular metastases are rare due to the presence of tunica albuginea and the low temperature in the scrotum. Several hypotheses have explained the development of testicular metastases, particularly for bladder tumors. One of the metastatic pathways is direct invasion, through vascular invasion, lymph node invasion, transperitoneal seeding, and genital invasion, principally through the vas deferens.

The lymphovascular system is the most common mechanism of tumor propagation in urothelial carcinoma. However, the molecular mechanisms to prevent metastatic invasion to the testis are still not clear.⁴

All reported cases metastatic urothelial carcinoma to the testis are from the bladder, or the prostatic urethra,⁵ some authors believe that testicular metastases of urothelial carcinoma may occur through the ejaculatory ducts⁵

Swelling of the left testicle and hematuria were suggestive of testicular cancer and bladder cancer. We performed cystoscopy and

cytological examination of the bladder and testicular ultrasound. The management was correct by the practice of the left orchiectomy and transurethral resection of the bladder.

4. Conclusion

Testicular metastasis of urothelial carcinoma should be suspected in patients with hematuria and testicular swelling. Only a few cases have been described in the literature. Even rarer, one case of spermatic cord metastasis was described by the Stanford team.

In our case, we suggest that the malignant cells may spread through the lymphovascular system after the invasion of the lymph nodes or through the left testicular vein.

Declaration of competing interest

The authors declare that there is no conflict of interests regarding the publication of this article

References

1. Eble JN, Sauter G, Epstein JI, Sesterhenn IA. *World Health Organization Classification of Tumours. Pathology and Genetics of Tumours of the Urinary System and Male Genital Organs.* first ed. Lyon, France: IARC Press; 2004.
2. Turo R, Smolski M, Hatimy U, et al. A rare case of testicular metastasis of bladder transitional cell carcinoma. *Can Urol Assoc J.* 2014;8(3-4):E181-E183. <https://doi.org/10.5489/cuaj.1690>.
3. Yang KC, Chao Y, Luo JC, et al. The unusual presentation of gastric adenocarcinoma as a testicular mass: a favorable response to docetaxel and cisplatin plus oral tegafur/uracil and leucovorin. *J Chin Med Assoc.* 2010;73(2):88-92. [https://doi.org/10.1016/S1726-4901\(10\)70007-1](https://doi.org/10.1016/S1726-4901(10)70007-1).
4. Appetecchia M, Barnabei A, Pompeo V, et al. Testicular and inguinal lymph node metastases of medullary thyroid cancer: a case report and review of the literature. *BMC Endocr Disord.* 2014;14:84. <https://doi.org/10.1186/1472-6823-14-84>.
5. Liedberg F, Chebil G, Davidsson T, Malmstrom PU, Sherif A, Mansson W. Transitional cell carcinoma of the prostate in cystoprostatectomy specimens. *Aktuelle Urol.* 2003;34(5):333-336.