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Urethral metastasis from primary embryonal carcinoma of testis - The first case report

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ABSTRACT

A 34-year-old man presented with bloody urethral discharge, dysuria, cough and right testicular mass. He had a history of anterior urethral stricture and multiple urethral dilation procedures. Radical orchiectomy and urethral mass biopsy were performed. The pathologist reported both of specimens revealed embryonal carcinoma. Abdominal and chest CT scan showed multiple metastasis. chemotherapy was started with the Bleomycin, Etoposide, and Cisplatin (BEP) regimen and this cycle was repeated every 3 weeks up to four times. Unfortunately, this patient died of brain metastasis.

Introduction

Primary urethral carcinoma is rare, and metastatic urethral carcinoma from any form of primary malignancy is even rarer[1] Metastasis to the urethra is most common from the prostate and bladder.[2] They have also been described with melanoma, bowel or lung adenocarcinoma, renal cell carcinoma and epithelial ovarian cancer (EOC).[3] Urethral metastasis from a primary origin is usually an expression of widespread metastatic disease and carries a poor prognosis[3]

The embryonal carcinoma of testis occurs either in pure form or as a component in mixed Germ Cell Tumors (GCTs). These tumors have a high propensity for metastatic spread.[4] To date, embryonal carcinoma of testis which spread to anterior urethra have not yet been reported in the published English-language literature. This paper is intended to describe an interesting case of urethral metastasis from an embryonal carcinoma of testis.

Case presentation

A 34-year-old Iranian man presented with voiding difficulties including poor stream, terminal dribbling, intermittent episodes of bloody urethral discharge and dysuria since 6 months ago. He also developed dry cough since one month ago. He had a history of urethral stricture and multiple urethral dilation procedures since 3 years ago. He does not smoke tobacco or consume alcohol. On clinical examination, a hard 1.5 × 1.5 cm right testicular mass was palpable but no mass lesion was palpated in the penis. There was no palpable inguinal lymph node.

Upper urinary tract and bladder ultrasound evaluation was normal. The ultrasound evaluation of scrotum detected a hypoechoic mass (20 × 15 mm) in the lower pole of right testis.

After admission to department of urology in the hospital, blood and urine test was performed, the test results were as follows: hemoglobin (HGB) 14g/L, platelets (PLT) 160 × 10^{1}°/L, red blood cells (RBC) 4.51 × 10^{12}/L, and white blood cells (WBC) 7.22 × 10⁹/L, blood urea nitrogen (BUN) 18 mg/dl, creatinine 1.1 mg/dl, alanine aminotransferase (ALT) 17U/L, and aspartate aminotransferase (AST) 20 U/L. Normal serum β HCG 3 IU/l (normal range<5 IU/l) and serum AFP 15 μg/l (normal range <40 μg/l) and increased level of serum LDH 771 IU/l (135–225 IU/l). Urine Routine Test revealed occult blood (+2), protein (−), RBC (20–40/HPF), and WBC(5–10/HPF). Urine cytology was positive for atypical cells.

Chest computed tomography (CT) and abdominopelvic CT scan showed multiple bilateral large pulmonary masses, subcarinal and bilateral hilar adenopathy and precaval lymphadenopathy (37mm).

Cystourethroscopy revealed a papillary tumor with bleeding in the penobulbar junction (Fig. 1), measuring 2–3 cm and almost filling the

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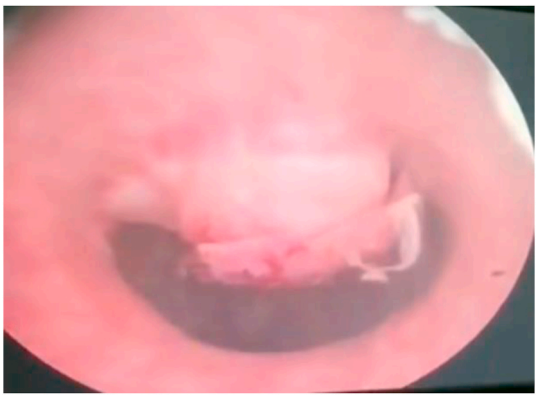

Fig. 1. Endoscopic aspect of urethral mass.

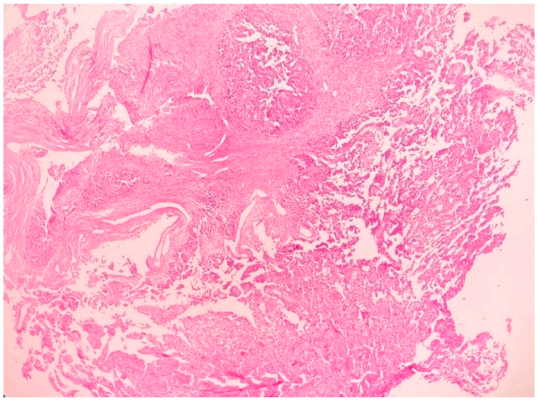

Fig. 2. Penile urethral mass. Tumor is composed of primitive large epithelial cells reminiscent of embryonal carcinoma (H&E, X 10objective).

lumen. An endoscopic cold cup biopsies was performed the pathology report is compatible with embryonal carcinoma (Fig. 2). The bladder mucosa was still smooth under the observation of 30 and 70° cystoscope and no obvious abnormality in the bilateral ureteral opening was seen. Random biopsies of the bladder were normal. At the same session right radical orchiectomy was done. the pathology report of which revealed embryonal carcinoma (Fig. 3).

Penile MRI with and without contrast showed a 25 × 21 mm intra-urethral enhancing mass in the bulbar portion of the urethra with corpus spongiosum invasion. Lung CT –guided biopsy was performed. the pathology report of which is compatible with embryonal carcinoma of testis.

In this case, immediate chemotherapy was started with the Bleomycin, Etoposide, and Cisplatin (BEP) regimen and this cycle was repeated every 3 weeks up to four times. In the follow up, lung metastasis began to shrink and bloody urethral discharge and dry cough stopped but this patient developed brain metastasis and the brain biopsy was compatible with embryonal carcinoma of testis; finally this patient died of brain metastasis.

Discussion

We report the unique case of embryonal carcinoma of testis which spread to anterior urethra which has not been reported yet. Testis cancer including embryonal carcinoma of testis is the most commonly diagnosed cancer in young men.[4]

Urethral metastasis from primary testis cancer is uncommon.[2] However, urethral metastasis from melanoma and lung, prostate, and colon cancers have been reported presenting with difficult urination, palpable nodules, acute urine retention and hematuria.[3] The most metastasized location is the bulbous urethra (53.8%).[2] Localized anterior urethral tumors can be treated with endoscopic or segmental resection or with partial penectomy. Systemic chemotherapy is used if there is evidence of distant metastasis. Radiotherapy or palliative diversion may be a suitable alternative to surgery in patients with widespread metastases when surgical resection could negatively affect quality of life.[1,2] in our case, regarding multiple metastasis, chemotherapy was started given the fact that urethral metastasis responded well, urinary diversion or other palliative therapy was not necessary to be performed.

The tumor may spread to urethra by retrograde venous extension, arterial embolism, or by direct invasion into the lymphatics and lumen of the vas deferens.[5] There is plentiful communication between the pelvic venous plexuses and the penile dorsal venous system[5] Because vascular invasion was evident in our patient, we believe that retrograde venous transport was the most likely route of spread.

Although some studies showed that lumen of vas deferens is the most common rout of spreading tumor from urethra to the testis.[5]

Conclusion

Urethral metastasis from embryonal carcinoma of testis has not been reported yet and may be easily overlooked. The patients with embryonal carcinoma of testis present with urethral metastasis is usually an expression of widespread metastasis and carries a poor prognosis. So, further urologic workup is reasonable.

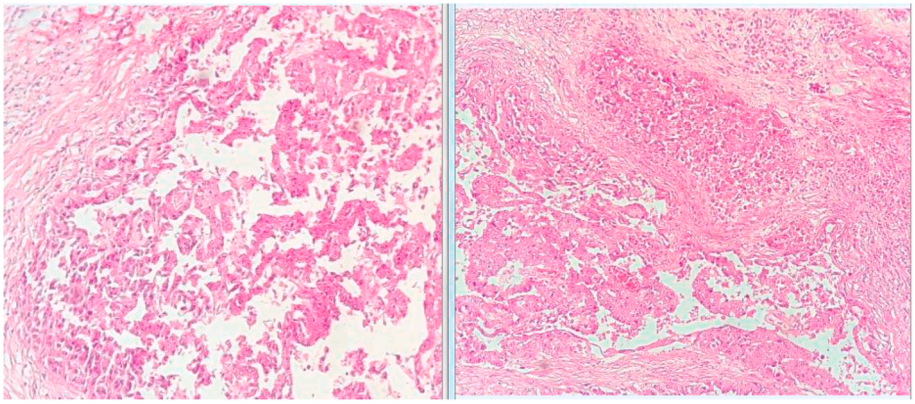

Fig. 3. Testis tumor. Tumor is composed of large epithelial tumor cells with prominent nucleoli and frequent mitotic figures forming solid psudoglandular and papillary patterns consistent with embryonal carcinoma (H&E, X 10 objective).

Conflict of interests

The authors declare that they have no conflict of interests.

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None.

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