Osteosarcoma metastases in penis

Dear Editor,

Metastatic deposits in penis are extremely rare. We report a case of secondary deposit from an osteosarcoma in a 35-year-old male patient who presented with dysuria. This case is reported in view of its rarity and to emphasize the need to consider the possibility of a metastatic disease for any soft tissue mass discovered at the time of diagnosis, during treatment, or after treatment of osteosarcoma. In spite of its rich vascularity and extensive circulatory communication between the penis and neighboring organs, penile metastases are uncommon.[1,2] Even if they occur, 75% of cases are from genital tract.[2] Most of these cases are associated with disseminated disease at the time of presentation. Patients may present with priapism, painful nodule (peyronies disease), and urinary obstruction.[1-4] More than 80% of the cases die within 6 months.

A 35-year-old man came to the urology clinic with difficulty in micturition. On examination, there was a fungating growth on the distal part of the penis. Based on clinical examination, it was diagnosed as a squamous cell carcinoma of the penis. The patient had a history of above knee amputation for osteosarcoma of the femur 4 years ago. He had received neoadjuvant multiagent chemotherapy.

We received a partial penectomy specimen of size 5 × 3.5 × 3 cm [Figure 1]. External surface showed a fungating cauliflower-like growth of 3.5 × 2.5 cm. On cut section, the tumor was hard in consistency involving the corpora cavernosa and urethra. Urethral opening was obscured.

Microscopy

Sections studied showed hyperkeratotic and hyperplastic squamous epithelium. Sub epithelium revealed a tumor composed of spindle-shaped cells in fascicles. Individual cells showed nuclear pleomorphism, high mitotic activity with foci of calcification, and tumor osteoid formation. Tumor giant cells were also seen [Figures 2-3]. Urethra was totally obscured. Cut end of the shaft was free from tumor. Thus, patient was diagnosed with metastases of osteosarcoma to the penis, rather than primary squamous cell carcinoma of the penis.

Metastasis to penis is a rare phenomenon, despite the rich vascularity and complex circulation of this organ. Majority of the metastatic lesions to the penis are from bladder, colon, rectum, kidney, and testis.[5] Isolated cases of metastasis from larynx, lung, skin, osseous tumors, are reported in literature.[1]

Penile secondaries commonly affect the shaft or glans penis. Bilateral involvement of the corpora cavernosa is seen, but preputial lesions are uncommon. Isolated secondary deposits involving fore skin alone are also reported.[1]

Main presenting features of penis secondaries include priapism, dysuria and indurated mass lesion. In our case, the presenting feature was dysuria.

The earliest report of secondary penile malignancy is credited to Eberth in 1870, when he reported metastasis

Figure 1: Gross photograph of partially amputated specimen of penis with a cauliflower-like growth

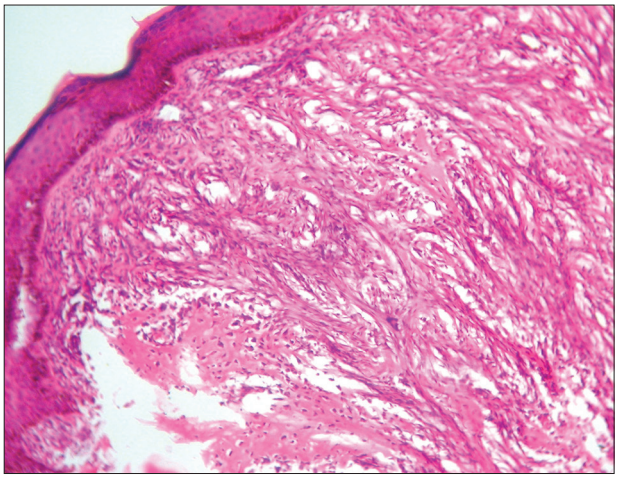

Figure 2: Hyperkeratotic squamous epithelium with underlying tumor and osteoid (H and E, × 10)

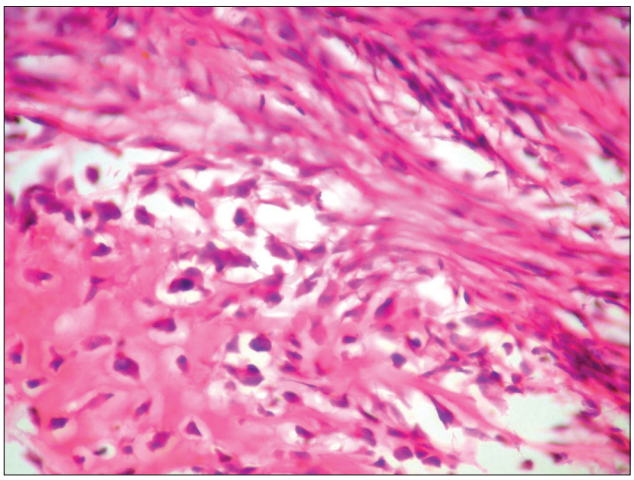

Figure 3: Tumor osteoid lined by pleomorphic osteoblasts (H and E, × 40)

from an adenocarcinoma of the rectum.[1] Paquin and Roland postulated the various possible mechanisms of spread of tumors to the penis.

Following are the five most accepted mechanisms: (a) retrograde venous route, (b) retrograde lymphatic route, (c) arterial spread, (d) direct extension, (e) implantation, secondary to instrumentation. The mean age of presentation is usually between 60 and 80 years.[1] In the present case, the patient was 35 years old. The choice of treatment is generally influenced by general health of the patient, as well as the site of primary, extent of metastatic spread, and the severity of symptoms. In the present case, partial penectomy was done as a palliative measure. After 6 months the patient was lost to follow-up.

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