Prostate cancer penile metastases

Yervand S. Harutyunyan, Arthur M. Grabsky, Haykaz Y. Antonyan, Emma V. Manukyan
Department of Urology, "St. Nerses the Great" SMC, Yerevan, Armenia

KEY WORDS

penis ◗ metastases ◗ prostate cancer

ABSTRACT

A 70-year-old man presented to our department in October 2007 with the compliant of permanent urinary catheter presence. Serum prostate-specific antigen was 35 ng/mL. Adenocarcinoma of the prostate with metastasis to the pelvic bone was diagnosed after a biopsy of the prostate and bone scintigraphy. Thereafter the patient underwent transurethral resection of the prostate and castration. In September 2009 the patient presented to the hospital complaining of a palpable mass in the penis. Biopsy of the penile tumor revealed adenocarcinoma of the penis. Chemotherapy was prescribed. The case indicates that urologists should consider the possibility of metastasis to the penis from the prostate cancer.

INTRODUCTION

Several theories tried to explain a cancer's predisposition to metastasize to certain organs. In 1889, Stephen Paget researched the mechanism that regulates organ-specific metastases and suggested that certain tumor cells (the "seed") had specific affinity for a milieu of certain organs (the "soil") [1]. In 1928, Ewing challenged Paget's "seed and soil" theory proposing instead that dissemination of metastatic cells is purely by mechanical factors that result from anatomical arrangement of the vascular system [2]. The latest publications indicate that different growth factors and cell surface receptors are involved in this process. The most common metastatic sites of prostate cancer are bones, lymph nodes, infrequently lungs, liver, brain, etc. The penis is an uncommon site for metastasis originating from a prostate cancer (0.3%) [3]. One hundred and two cases of penile metastases from carcinoma of the prostate were identified in the literature to date [4-7]. Metastatic spread of prostate cancer to the penis occurs by several routes. Retrograde venous or direct lymphatic/vascular invasion and direct extension through the lumen of vas deferens are the most common mechanisms [8, 9]. We describe herein a very rare case of prostate cancer metastases to penis.

CASE REPORT

A 70-year-old man presented to our department in October 2007 complaining of the presence of a permanent urinary catheter, which was inserted the day before due to acute urinary retention. Digital rectal examination revealed an enlarged prostate with firm consistency, and serum level of prostate-specific antigen was 35 ng/mL. Transrectal color and power Doppler ultrasound showed disorganized vascular architecture of the prostate (measuring 6.0-5.7-6.0 cm) and hypo-echoic areas in the peripheral zone. Subsequent transrectal ultrasound guided biopsy confirmed adenocarcinoma of the prostate with Gleason score of 4 + 4 = 8 (Fig. 1). Bone scintigraphy revealed osseous metastasis. The patient was offered to choose the treatment modality: castration and wait 1-2 months to remove the urethral catheter, as in 50 – 60% of cases micturition recovers; or transurethral resection of the prostate (TURP) and castration. The patient chose TURP and castration for immediate results. After the surgery during follow-up, neither PSA elevation (<1.0 ng/mL) nor maximal flow rate (>15 ml/sec) decrease was present. In September 2009 the patient presented to the hospital complaining of a palpable mass in the penis (Fig. 3). Biopsy of the penile tumor revealed solid adenocarcinoma (Gleason 5 + 5 =10) of the penis (Fig. 2). Chemotherapy was prescribed.

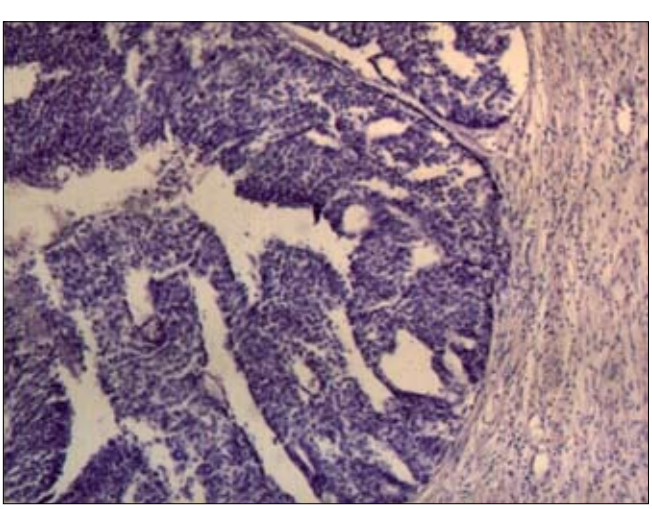

Fig. 1. Microscopy shows adenocarcinoma of prostate, Gleason 4 + 4 = 8 (Hematoxylin & Eosin, x 240).

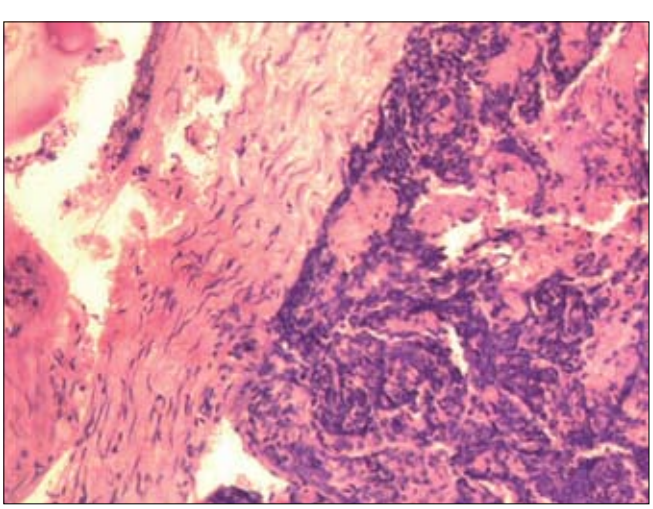

Fig. 2. Microscopy shows adenocarcinoma of penile metastases, Gleason 5 + 5 = 10 (Hematoxylin & Eosin, x240).

Fig. 3. Penile metastasis of the prostate cancer.

DISCUSSION

Penile metastases from prostate cancer present as single or multiple skin nodules over the prepuce, glans, or the coronal sulcus. The most frequent clinical presentations are: lower urinary tract symptoms (28.5%), priapism (50%), penile pain (16.3%), and the presence of palpable nodules (7.1%) [10]. The presence of painless nodules in our patient makes the case even more exceptional, since only 7 similar cases have been documented to date [10]. Over the past years various treatment modalities have been evaluated: however none of them provide satisfactory results. The patients should be treated as those with a metastatic prostate cancer. The initial treatment is hormonal therapy or surgical castration. Chemotherapy has also been tried with varying success rates [4-7].

The indications for penile amputation include the presence of intense and refractory pain, priapism, and acute urinary retention [11]. In our case the decision not to perform amputation was based on the absence of pain associated with the metastatic lesions as well as the absence of priapism and lower urinary tract symptoms.

CONCLUSION

Concluding our report we suggest that careful observation of prostate cancer patients is necessary even when osseous metastasis is well controlled and serum PSA levels are kept within normal ranges. Management of the patients with penile metastases from carcinoma of the prostate should be focused on improving quality of life in view of the poor prognosis.

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Correspondence

Haykaz Y. Antonyan
"St. Nerses the Great" SMC
Department of Urology
19, Hrachya Nersisyan Street
Yerevan 0014, Armenia
phone: +37 491 411 616
haykaz_antonjan@yahoo.com