Malignant Melanoma of the Penis in a Patient with a History of Prostate Brachytherapy: A Case Report and Review of Literature

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Abstract

\textbf{Introduction:} Penile melanoma is rare and usually results in a poor prognosis. We report a case on a male who presents with penile melanoma after being treated with radiation therapy for his prostate cancer.

\textbf{Presentation of Case:} We describe a rare case of penile melanoma discovered 3 years post radiation therapy for prostate cancer in an 84 year old gentleman. The patient presented with a dark skin lesion on the glans. It was noted in the patient’s chart that there was no prior history of melanoma or sun exposure to the genital region. Upon further work up, the patient was found to have penile melanoma without metastases. The patient opted for a partial penectomy. After routine follow up, through 7 year later, the patient continues to show no evidence of reoccurrence of melanoma or metastatic disease.

\textbf{Conclusion:} While melanoma is common in the male gender, penile melanoma is found to be only a very small percentage of these cases. Particular interest was taken in this case due to the patient’s history of being treated with Brachytherapy I-125 seeds for his prostate cancer. Although probable cause of the melanoma is unclear, further investigation is warranted for patients who develop penile melanoma post radiation therapy for prostate cancer.

Keywords: Brachytherapy; Melanoma; Penile Neoplasms

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Introduction

Primary melanoma of the penis is rare and is classically associated with a poor prognosis. Fewer than 200 cases have been described in the literature since the first report in 1882 [1]. The optimal treatment for malignant melanoma of the penis is unclear. We report a case of primary melanoma of the penis in a man with a history of prior radiation therapy for prostate cancer treated with partial penectomy and sentinel lymph node biopsy.

Case Presentation

The patient is an 84 year old man who was diagnosed with adenocarcinoma of the prostate at age 73. His pathology revealed a Gleason score of 6. He underwent treatment for this with brachytherapy with I-125 seeds. The patient was without apparent ill effects and subsequently his Prostate Specific Antigen level (PSA) dropped and stabilized at < 0.1. After two to three years, the patient stated that he noticed a “ bruise” developing on the glans and that at the time of presentation it was starting to thicken in appearance. He denied any pain or exudate. The patient had no prior history of melanoma and denied any history of sun exposure to the genital region. On physical exam there was a dark, slightly raised lesion on the right ventral aspect of the glans with a diameter of about 2cm which was non-tender. A second 5mm lesion was seen near the meatus. No inguinal lymph nodes were palpable (Figure 1).

Biopsies done of both lesions found malignant melanoma. Chest radiograph showed no metastases and CT of the abdomen and pelvis revealed no enlarged lymph nodes as well as no metastases. Partial penectomy with a 2cm margin from the glans was then performed without incident (Figure 2). Pathology of the specimen demonstrated malignant melanoma with 4 mm depth of invasion (Figure 3). Lymphoscintigraphy was then performed and mapped to the bilateral inguinal lymph nodes. The patient underwent bilateral inguinal sentinel node biopsies which were negative for malignancy.

Due to the elevated risk of his stage IIc cancer status, the patient was offered adjuvant Interferon therapy but he instead opted for observation. The patient has continued to return for routine follow-up in the Melanoma clinic, and after 7 years, there has been no evidence of recurrent metastatic disease, nor any new melanomic lesion elsewhere.

Figure 1 (left) Patient’s glans showing the 5 mm melanomic lesion on the right ventral aspect.

Figure 2 (right) Partial penectomy performed with a 2 cm margin from the glans.
Discussion

Melanoma is the fifth most common cancer in men but penile melanomas represent only about 0.2% of the total number of cases, and of all penile malignancies, only 1% are melanomas [2].

Most reported cases of penile melanoma occurred in the sixth and seventh decades of life, which is later than for other cutaneous sites [2-4]. The glans is the most frequent site of occurrence, followed by the prepuce [3-5].

Presentation is often delayed by two years or more due to misdiagnosis or patient reluctance, stemming from fear of malignancy or embarrassment [4-7].

Penile melanoma metastasizes early via lymphatic channels. A review of 56 cases demonstrated lymph node enlargement in 43%, at time of presentation, and another series of 11 patients showed metastatic disease in 24%, at time of diagnosis [4,8].

Recommendations for surgical therapy of the primary lesion have varied from circumcision to local wide excision, and partial penectomy to total penectomy, depending on the site and size of the tumor [7, 9-12]. Penile sparing surgery can include glans amputation as well as distal third penectomy [8].

Management of the inguinal lymph nodes has been controversial. Inguinal lymphadenectomy is indicated for patients with palpable inguinal lymph nodes, although many of these patients may already have occult distant metastases and ultimately will not benefit from the procedure [10].

The recommended procedure for those without palpable lymph nodes has evolved. The prior standard of bilateral inguinal lymph node dissection has waned in prominence due to the significant morbidity of the procedure and the low incidence of metastasis in that population [7, 10]. The development in the 1990’s of the technique of radiocolloid mapping and dye localization of the lymphatics has led to the utilization of less invasive sentinel node
biopsies [10, 13]. Lymphoscintigraphy can be done with minimal morbidity and good localization of the relevant non-palpable lymph nodes [13, 14].

Our patient presented with a 4mm thick lesion without palpable lymph nodes on exam, and no lymphadenopathy on CT scan. Rather than performing a bilateral inguinal lymph node dissection, scintigraphy was chosen for localizing the bilateral sentinel nodes. The biopsies of these nodes found minimal morbidity, revealing no metastases and providing accurate staging for further treatment and prognosis. Of particular interest in this case was the patient’s history of prior radiation therapy (Brachytherapy) for prostate cancer. He was treated with I-125 seeds and developed pigmented changes on his glans two to three years later.

**Conclusion**

In our patient, malignant melanoma of the penis was diagnosed 3 years post Brachytherapy for Prostate Cancer. The patient was treated with a partial penectomy and has demonstrated no reoccurrence after 7 years of follow up. The melanoma is of much interest as the patient had no prior history of melanoma or sun exposure to the genital region. Potentially this was just a coincidence, but the large cohort of prostate cancer patients treated with this modality in the past 20 years is maturing and any increase in the incidence of penile melanoma in this population would warrant further investigation into possible correlations.

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**References**
