Radiology Case Reports 12 (2017) 726–730

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: http://Elsevier.com/locate/radcr

Genitourinary

A report of two deep-seated noncutaneous penile tumors: more than meets the eye

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ARTICLE INFO

Article history:
Received 20 June 2017
Received in revised form 13 July 2017
Accepted 15 July 2017
Available online

Keywords:
Penile mass
Rare penile neoplasm
Sarcoma
Lymphoma

ABSTRACT

Penile cancer is an uncommon primary genitourinary malignancy, the vast majority representing superficial squamous cell carcinomas. However, less common skin cancers, secondary malignancies, mesenchymal neoplasms, and hematopoietic tumors do affect the penis. Medical history, atypical presentation, and deep epicenter of a penile mass may raise question of a nonepithelial neoplasm. We describe and discuss 2 examples of rare deep-seated penile malignancies, leiomyosarcoma and B-cell lymphoma.

Introduction

Penile cancer is rare in the United States, accounting for less than 1% of male cancer in the US [1]. Nearly all penile cancers are skin cancers, and most (95%) represent squamous cell carcinoma. Other less common skin cancers of the penis include basal cell carcinoma, melanoma, and adenocarcinoma. Much rarer malignancies of the penis include penile metastases, soft tissue sarcomas, and lymphoma. Herein, we present 2 companion examples of rare, deep-seated, less commonly considered penile neoplasms, leiomyosarcoma with myxoid features and relapse of diffuse large B-cell lymphoma with concurrent gene rearrangements, with an emphasis on pertinent magnetic resonance imaging (MRI) findings.

Conflicts of Interest: The authors report no conflicts of interest.
Ethical Statement: The authors report compliance with all appropriate ethical standards.
Funding: No grant funding was used for this study.
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https://doi.org/10.1016/j.radcr.2017.07.012

Case reports

Case 1

A 68-year-old male with a history of chronic kidney disease presented to his primary care physician for evaluation of a small, palpable nodule on his penis. The patient was clinically diagnosed with Peyronie disease, but the lesion grew over the next weeks to months, and he was subsequently referred to our institution for further evaluation. Unenhanced and gadolinium-enhanced MRI of the penis and pelvis was performed, demonstrating a heterogeneous penile mass involving both the corpora cavernosa and spongiosum abutting and slightly displacing the right and left spermatic cords laterally (Fig. 1). The mass exhibited moderately hyperintense T2-weighted signal, avid intravenous contrast enhancement, an area of internal necrosis, and an associated rightward curved deformity of the penile shaft (Fig. 2A-B). The curved deformity likely explains an initial diagnosis of Peyronie disease. After incisional biopsy, penectomy with perineal urostomy was performed successfully without postoperative complication. The final histopathologic diagnosis was leiomyosarcoma with myxoid features, grade III. Surgical margins were negative. At surgery, the spermatic cords were not involved by tumor and, therefore, spared during the operation. The patient declined both adjuvant radiation and chemotherapy, opting for close postoperative surveillance. In a short time, however, he developed a local perineal recurrence (Fig. 3) but without distant metastatic disease. He was then treated with radical scrotectomy, bilateral orchiectomy, perineal resection, and urinary diversion. Adjuvant radiation therapy was planned to improve local control of disease.

Case 2

A 66-year-old male presented to his oncologist with a new palpable penile mass. His medical history included previously

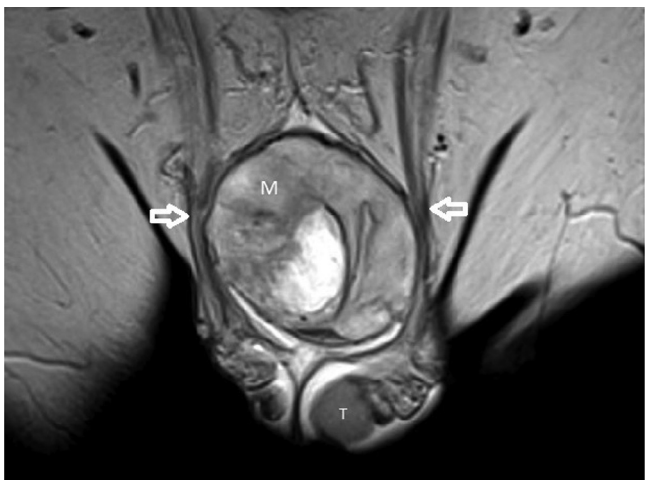

Fig. 1 – Coronal T2-weighted TSE magnetic resonance imaging demonstrates a large mass (M) with an internal area of hyperintense necrosis of the penile shaft involving the corpora and abutting the spermatic cords (arrows). T = testis, left; TSE = turbo spin echo.

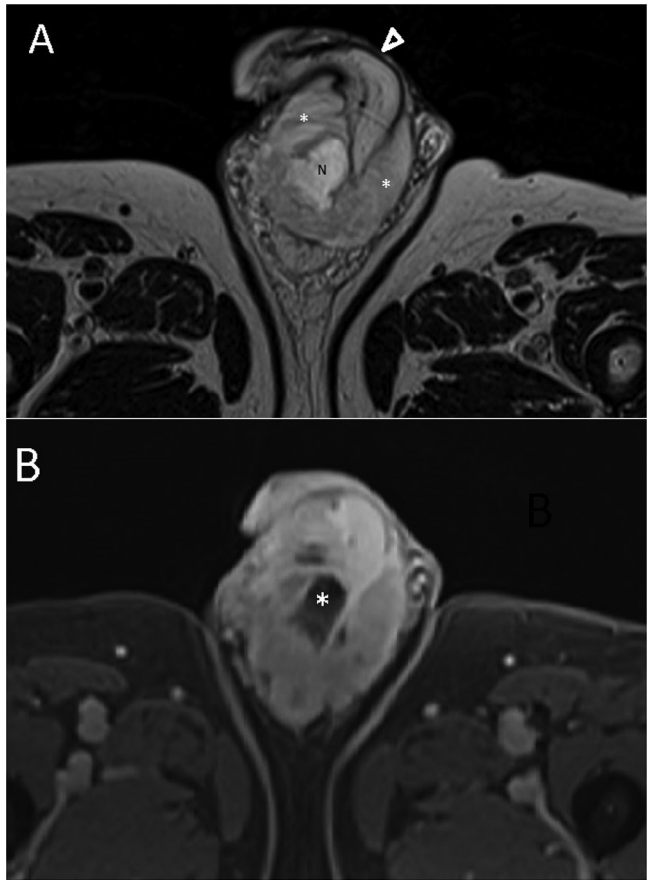

Fig. 2 – (A) Axial T2-weighted TSE and (B) gadolinium-enhanced T1-weighted fat-suppressed 3D-GRE imaging demonstrates a T2-hyperintense, avidly enhancing mass (* in A) with internal necrosis (N in A; * in B) and a rightward curved deformity of the penis (arrowhead in A). GRE = gradient echo.

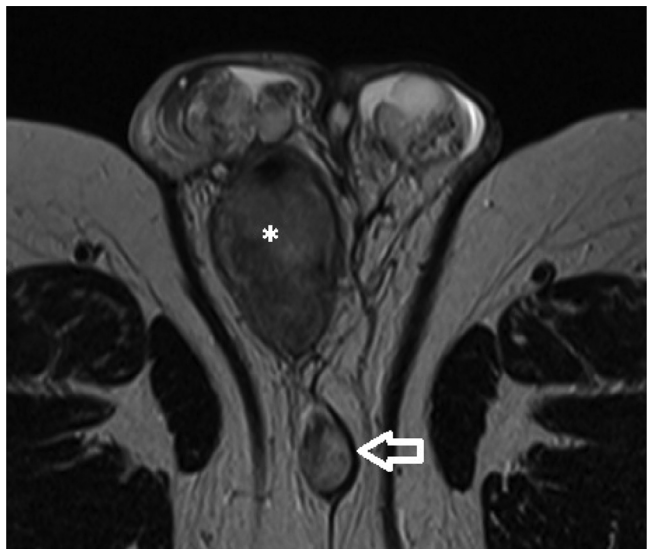

Fig. 3 – Axial T2-weighted TSE imaging three months following penectomy with perineal urostomy (arrow) demonstrates a new perineal mass (*) posterior to the scrotum proven to represent local tumor recurrence.