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Title: Metastatic prostate cancer masquerading as lymphangioma circumscriptum

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Introduction:

Cutaneous metastases from visceral malignancies occur in 0.7-9% of patients with cancer\(^1\). However, prostate cancer is one of the least likely malignancies to result in cutaneous metastasis. Cutaneous metastasis occurs in less than 0.1% of patients with prostate cancer\(^2\).

Prostatic cutaneous metastases most often present as multiple papules or nodules in the inguinal region\(^3\).

Here, we report a case of cutaneous metastases of prostate adenocarcinoma mimicking lymphangioma circumscriptum.

Case Presentation:

A 71-year-old-man presented with a two-month history of a localized, asymptomatic rash involving the bilateral inguinal region. The patient had a past medical history significant for long-standing untreated bilateral inguinal hernias and castration-resistant stage IV prostatic adenocarcinoma with known metastases to the bone, lymph nodes, and liver. He had recently completed a 4-month course of chemotherapy with docetaxel and was on cabazitaxel therapy at the time of presentation. He had previously failed a two-week trial of topical nystatin cream to the area, as prescribed by his genitourinary oncologist.

Physical examination revealed grouped 3-8 mm translucent pink papules and nodules with papillomatous projections on a background of well-defined purpura involving the left inguinal crease and scrotum, the largest measuring 1.1 cm in diameter (Figure 1). Significant left-sided scrotal edema and erythema were also noted. Based on the clinical findings, in the setting of his inguinal hernia, a diagnosis of cutaneous lymphangiectasias or microcystic lymphangioma circumscriptum was suspected. Scallop biopsy was performed, with hematoxylin-
eosin-stained sections revealing sheets of nested malignant epithelioid cells in the dermis (Figure 2A). The cells had vesicular nuclei and cytoplasmic clearing with focal epidermotropic involvement (Figure 2B). Immunohistochemical stains showed that the lesional cells strongly expressed NKX.3.1, PSA (A1 and A2), and CAM5.2, consistent with a diagnosis of metastatic prostatic adenocarcinoma (Figure 2C). At a 10-day follow-up with his oncology team, the patient’s rash was re-photographed with marked coalescence and flattening of the exophytic lesions on both inguinal folds (Figure 3A and 3B).

Discussion:

Prostatic adenocarcinoma is the most common non-cutaneous malignancy in males and is the second leading cause of cancer-related deaths in males in the United States. Cutaneous metastasis is rare, occurring in only 0.03-0.6% of cases, and is associated with advanced-stage disease and worse prognosis. This presents as multiple nodules or papules and most commonly affects the penis or inguinal region. Cases resembling a zosteriform rash, cellulitis, angiosarcoma, mammary Paget’s disease, basal cell carcinoma, sebaceous cyst, trichoepithelioma, pyoderma gangrenosum, and morphea are described in the literature. Due to the rarity and diversity of clinical manifestations of cutaneous metastatic prostate cancer, histopathologic analysis with immunohistochemical staining is important in confirming the diagnosis.

Lymphangioma circumscriptum (LC), or microcystic lymphatic malformation, is an uncommon and benign condition that may be congenital (present at birth) or less commonly acquired. Acquired LC occurs secondary to dilation of previously normal lymphatic channels that have become obstructed by external causes, including hernias, tumors, prior lymphatic
infections, radiation, or surgery. Diagnosis is usually recognized clinically, with lesions appearing as a cluster of small, cutaneous, translucent vesicles that resemble frogspawn and are otherwise asymptomatic. We present a case of cutaneous metastatic prostatic adenocarcinoma masquerading as lymphangioma circumscriptum to bring awareness to this unique presentation and highlight the importance of performing a biopsy of new skin findings in patients with known carcinomas.
References


Figure Legend:

Figure 1: Translucent pink papules and nodules with papillomatous projections on a background of well-defined purpura involving the left inguinal crease and scrotum.

Figure 2: A) Sheets of nested malignant epithelioid cells in the superficial to mid-dermis (H&E, 5x). B) Epithelioid cells with vesicular nuclei and some cytoplasmic clearing with focal epidermotropic involvement (H&E, 40x). C) Immunohistochemical staining of lesional cells showing strong expression of PSA.

Figure 3: Marked coalescence and flattening of the exophytic lesions on both inguinal folds seen ten days after biopsy; A) right inguinal fold, B) left inguinal fold.