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Case presentation

Cutaneous metastasis from penile squamous cell carcinoma resembling carcinoma en cuirasse

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Abstract

Penile squamous cell carcinoma is a rare malignancy seen more frequently in developing nations. Metastasis occurs in a predictable manner, with superficial lymph node involvement occurring first, followed by deep lymph node involvement, and then distant spread. Brain, lung, liver, and bone are the typical sites of distant metastasis. We present the unusual case of an 81-year-old man with penile squamous cell carcinoma requiring total penectomy who developed a confluent red to violaceous, indurated suprapubic plaque with satellite papules and bulky inguinal lymphadenopathy. The shield-like clinical presentation and infiltrating strands and cords on histology resembled carcinoma en cuirasse, a rare form of cutaneous metastasis frequently associated with breast cancer but not reported with penile squamous cell carcinoma.

Key Words: squamous cell carcinoma, metastatic skin cancer, penis, genitals, penile carcinoma

Case synopsis

An 81-year-old man was admitted to the hospital with failure to thrive. He was uncircumcised and suffered from phimosis prior to his diagnosis of penile squamous cell carcinoma of the glans, requiring total penectomy. For one month, he had a non-painful cutaneous eruption in his suprapubic region, which subsequently involved his scrotum and right thigh. On physical examination, there was a confluent red to violaceous, indurated plaque with multiple nodules and overlying hemorrhagic and serous crust diffusely involving the suprapubic region that extended onto the superior aspect of the scrotum. There were also several satellite, firm, pink to violaceous papules

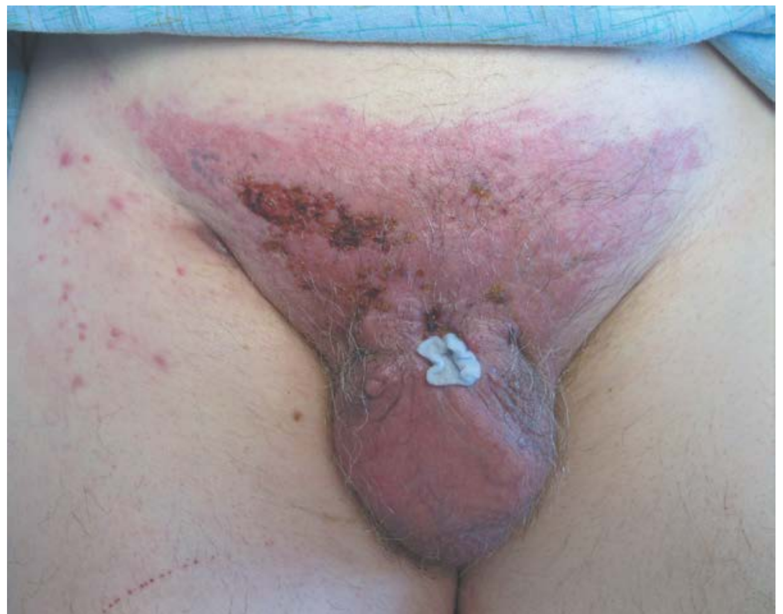

Figure 1. Involving the suprapubic region is a confluent red to violaceous, indurated, nodular plaque, associated with several satellite, firm, pink to violaceous papules on the proximal thigh.

on the right anterior proximal thigh, as well as drainage from a fistula in the right inguinal fold. Bulky inguinal lymph nodes were palpated bilaterally.

Skin biopsies were obtained from the suprapubic plaque and from a papule on the proximal thigh. Histopathologic evaluation revealed moderate to poorly differentiated squamous cell carcinoma (SCC). There was a large tumor mass in the dermis as well as infiltrating stands and cords of SCC in the upper dermis. Tumor cells were identified within the lymphatics.

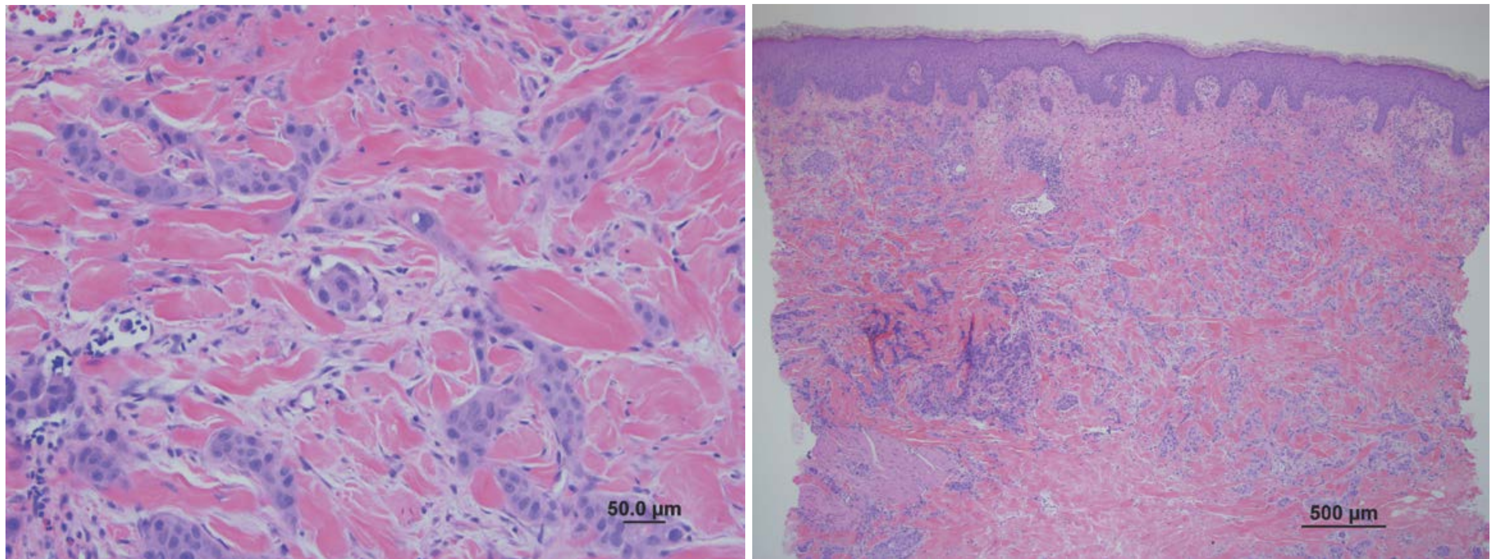

Figure 2A. Infiltrating strands and cords of moderately to poorly differentiated squamous cell carcinoma coursing through the upper dermis, Hematoxylin and eosin stain, 10x magnification. **Figure 2B.** Squamous cell carcinoma within lymph vessels and forming around collagen bundles, Hematoxylin and eosin stain, 20x magnification.

Further imaging revealed bone, lung, and lymph node metastases. The patient and his family chose to pursue a comfort care approach rather than treatment of his metastatic disease.

Discussion:

Although penile SCC is rare in developed countries, it still occurs relatively frequently in other parts of the world [1]. Risk factors associated with penile SCC include lack of circumcision, poor hygiene, phimosis, human papillomavirus, chronic inflammation, smoking, and psoralen plus ultraviolet A phototherapy [2]. Additionally, lichen sclerosus appears to be a precursor in a subset of penile SCC [3].

Penile SCC most commonly appears on the glans or prepuce and may present as an exophytic growth, ulcerated nodule, or flat ulcer with pruritus, burning, pain, discharge, bleeding, or foul odor. Approximately 50% of patients have palpable lymphadenopathy at presentation, but only half of these patients have nodal metastases; inflammatory reaction accounts for the remainder [4]. Lymphatic spread occurs by a predictable and well-characterized anatomic route, with the superficial inguinal lymph nodes affected first, followed by dissemination to the deep inguinal and pelvic lymph nodes [5]. The most common sites of distant metastases are brain, lung, liver, and bone [6].

Although cutaneous metastasis is not common in penile SCC, case reports have documented distant cutaneous metastases through presumed hematologic or perineural intralymphatic spread [6, 7]. Our patient had an indurated plaque on the suprapubic region and satellite lesions resembling carcinoma en cuirasse, a rare form of cutaneous metastasis frequently associated with breast cancer. Carcinoma en cuirasse invades the skin through lymphatics and classically begins as firm erythematous papules or nodules, which coalesce into a morphea-like indurated plaque [8]. Histologically, fibrosis is predominant and tumors cells form strands and cords between collagen bundles. Although carcinoma en cuirasse has not been reported with penile SCC, the clinical and histological pictures of our patient are consistent with it.

For treatment of lower tumor stages and grades, conservative approaches such as circumcision, glansectomy, glans resurfacing, or Mohs micrographic surgery are appropriate [9]. However, for higher tumor stages and grades, more aggressive surgical treatments such as partial or total penectomy are necessary [9]. Radiotherapy is an alternative for small, low stage tumors or for palliation [9]. Systemic chemotherapy with vincristine, bleomycin, and methotrexate or with cisplastin and 5-fluorouracil is considered for locally advanced disease or metastatic disease [9].

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