Primary Melanoma of the Penis in 3 Patients With Lichen Sclerosus

Genital lichen sclerosus (GLSc) is associated with squamous cell carcinoma (SCC), although the precise cause is not known. We describe 3 male patients with GLSc and primary penile melanoma. To our knowledge, a possible association between lichen sclerosus and primary penile melanoma has not previously been discussed.

Report of Cases

Case 1. A man in his 50s presented with a firm nodule growing in the left coronal sulcus over 4 months (Figure). Three years earlier, he had been diagnosed with GLSc and unsuccessfully treated with topical steroid preparations of various potencies. Ultimately, he underwent a curative circumcision that same year with histological confirmation of GLSc. Clinically, SCC was suspected, and an excisional biopsy was performed that showed a primary nodular melanoma with a Breslow thickness of 1.2 mm and Clark level 5. Ulceration was seen. Perineural, vascular, and lymphatic invasion were absent. Excision was incomplete, but the patient declined further surgery.

There was some clinical and histologic uncertainty whether the penile lesion was a secondary deposit rather than a primary melanoma. Meticulous clinical examination and extensive initial staging revealed no alternative primary nor metastatic disease. Two months later he developed subcutaneous melanoma deposits on his chest as well as pulmonary and liver metastases. He declined chemotherapy and was treated palliatively until he died.

Case 2. A man in his 30s presented with a 1-year history of a slowly growing pigmented lesion on the glans of the penis. Clinically, melanoma was suspected, but he also had signs of active GLSc (a tight, scarred frenulum and a constrictive posthitis). An excisional biopsy showed a narrowly excised early radial growth phase mucosal lentiginous melanoma, Breslow thickness of 0.1 mm. He underwent wider excisional surgery and was also circumcised. The foreskin histologic analysis demonstrated GLSc. At last follow-up, he remained alive and well.

Case 3. A man in his 40s presented with a pigmented macule of the glans penis of uncertain provenance. He had white sclerotic lesions of the glans and foreskin, biopsy of which confirmed GLSc. Histologic analysis of specimens from the pigmented lesion showed early radial growth phase melanoma with a Breslow thickness of 0.44 mm. The melanoma was completely excised, and a circumcision was performed. At last follow-up, the patient remained alive and well.

Discussion | Male GLSc is a lymphocyte-mediated dermatosis of controversial pathogenesis, but the weight of evidence points to chronic occluded exposure of a susceptible epithelium to urine. It is thought that chronic inflammation and scarring due to GLSc are the drivers to SCC. The published rates of this complication range from 0% to 12.5%.

Squamous cell carcinomas constitute 95% of penile cancers. Penile melanoma is responsible for less than 1% and typically occurs in the sixth and seventh decades of life; 50% occurs on the glans. It has an extremely poor prognosis (5-year survival, 31%). Although UV radiation is important in the pathogenesis of cutaneous melanoma, the cause of genital mucosal disease is obscure.

Primary vulval melanoma has been reported in women with coexisting GLSc. A possible causal relationship has been discussed, involving a pro-oxidative environment that increases the risk of mutations and disruptions of local mechanisms protecting against “melanocyte carcinogen.” However, the investigators note that the finding may be coincidental rather than causal.

To our knowledge, no cases of concomitant penile melanoma and GLSc have previously been reported. The occurrence of melanoma and GLSc observed in the 3 patients we describe herein may be a coincidence, but in 22 years of providing a dedicated genital dermatology service, these are the only penile melanomas that we have seen. In other words, no penile melanomas have been seen in the absence of GLSc.

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**Sorafenib-Induced Eruption Mimicking Erythema Multiforme**

Sorafenib tosylate is an orally administered small-molecule multikinase inhibitor that targets vascular endothelial growth factor receptors (VEGFR)-2 and -3, platelet-derived growth factor receptor (PDGFR), rearranged during transfection (RET), FMS-like tyrosine kinase 3 (FLT3), c-KIT, and C- and B-Raf. This drug is approved by the US Food and Drug Administration for the treatment of advanced renal cell carcinoma, unresectable hepatocellular carcinoma, and radioactive iodine–resistant, advanced, differentiated thyroid carcinoma. Cutaneous adverse effects of this drug affect up to 91% of patients. Commonly reported eruptions include nonspecific rash and hand-foot skin reactions, which can be dose-limiting toxic reactions. Erythema multiforme (EM) has also been described.3-6

**Report of a Case |** A man in his 70s was enrolled in a clinical trial of sorafenib for patients with metastatic androgen-independent prostate cancer. He had a remote history of genital, but not orolabial, herpes simplex virus infection. His baseline dermatologic examination was unremarkable. Ten days after initiation of sorafenib therapy, 400 mg twice a day, the patient developed nontender, pruritic, erythematous papules and plaques on the trunk. He complained of fatigue but had no other systemic symptoms. Sorafenib treatment was withheld. Histologic examination of a punch biopsy specimen demonstrated a mild superficial perivascular and periadnexal lymphohistiocytic infiltrate with numerous eosinophils.

Two days later, the patient returned to the clinic with progression of the eruption. Numerous targetoid lesions with dusky centers, surrounding white rings, and peripheral erythematous rings were present on the trunk (Figure 1) and extremities. Several lesions had pseudovesicles or vesicles centrally. His oral mucosa showed several pinpoint white papules with an erythematous base without evidence of erosions. He denied systemic symptoms. Test results were positive for serum herpes simplex virus-2 IgG and negative for IgM.

Given the concern for EM from the clinical appearance, the patient underwent 2 additional punch biopsies from a targetoid lesion on the abdomen, and he was empirically treated with oral valacyclovir and fluocinonide, 0.05%, cream. Histopathologic analysis demonstrated spongiotic dermatitis with a superficial perivascular inflammatory infiltrate consisting of lymphocytes and numerous eosinophils. No interface changes were seen (Figure 2). The histologic features seen in these specimens were most compatible with a medication-induced hypersensitivity reaction rather than EM. The eruption improved, and 8 days after its first appearance, the patient restarted a sorafenib regimen at a 50% dose reduction without recurrence of the EM-like reaction.

**Discussion |** While there are numerous published reports of sorafenib-induced EM, several of these cases do not report histopathologic confirmation. One previously described patient was able to restart sorafenib therapy without recurrence of the eruption,2 but other patients have had recurrence of the eruption after beginning retreatment or have not been rechallenged.3-6 Despite the clinical appearance of our patient, histopathologic changes were not consistent with EM,