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Lichen sclerosus–associated nevus on glans penis mimicking melanoma

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Key words: lichen sclerosus; malignant melanoma; nevi; nevus.

INTRODUCTION

Penile melanomas are rare and approximately 200 cases exist in the literature, with a mean patient age of 67 years on presentation.[1] Nevi on genitalia can prove a diagnostic challenge because of clinical, dermoscopic, and histologic similarities with malignant melanomas.[2] When nevi are superimposed on lichen sclerosus in mucosal skin, the diagnostic difficulties are even greater and correct diagnoses requires histopathologic examination. Various opinions about the interpretation of melanocytic lesions associated with lichen sclerosus have been published, and only a few cases describe the association on male genitalia.[3-7] Genital nevi superimposed by lichen sclerosus may recur after biopsy and show signs of proliferative activity in the dermal-epidermal junction, so key histopathologic findings are necessary to differentiate nevi from malignant melanomas.[3,6]

We present a case of a young man with a pigmented lesion on the glans penis that developed de novo and increased rapidly in size. Histopathology determined the lesion as an atypical compound nevus, composed of irregular distributed melanocytes, with the chronic inflammation and scarring of dermal tissue caused by lichen sclerosus. The aim of this case report is to alert clinicians about a possible association between lichen sclerosus and rapid growth of nevi on male genitalia that can mimick malignant melanoma, and the histopathologic difficulties when confronted with nevi superimposed on lichen sclerosus.

CASE REPORT

A man in his mid 30s presented with a pigmented lesion on the glans penis, which quickly increased in size during a 10-month period. Medical history was significant for circumcision because of lichen sclerosus 3 years before referral to our clinic. There was no disposition for malignant melanomas was reported. The pigmented lesion was initially suspected as malignant melanoma by a dermatologist and referred to the department of plastic surgery for excision. On clinical examination, the lesion measured 22 mm, was irregularly outlined with varying brown to black pigmentation, and exhibited an additional pigmented focus, causing suspicion for a satellite formation (Fig 1). Dermoscopy showed a broad network, peripheral dots, and pseudopods. To spare the external urethral meatus, the excision biopsy was conducted with a narrow margin. Histopathology showed a melanocytic lesion composed of an excess of melanocytes in a nested and lentiginous pattern, with irregular distribution at the dermal-epidermal junction (Fig 2). No continuous basal rows of melanocytes or upward scatter of melanocytes was present, and underlying dermal

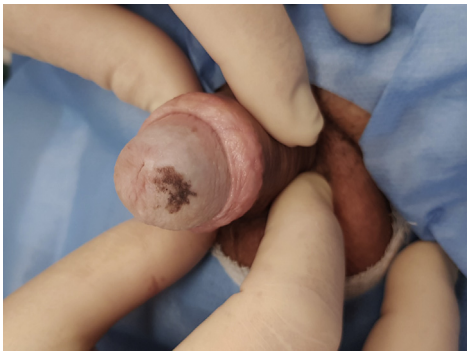

Fig 1. Atypical nevus on a background of lichen sclerosus. Preoperative dorsal view of the glans penis.

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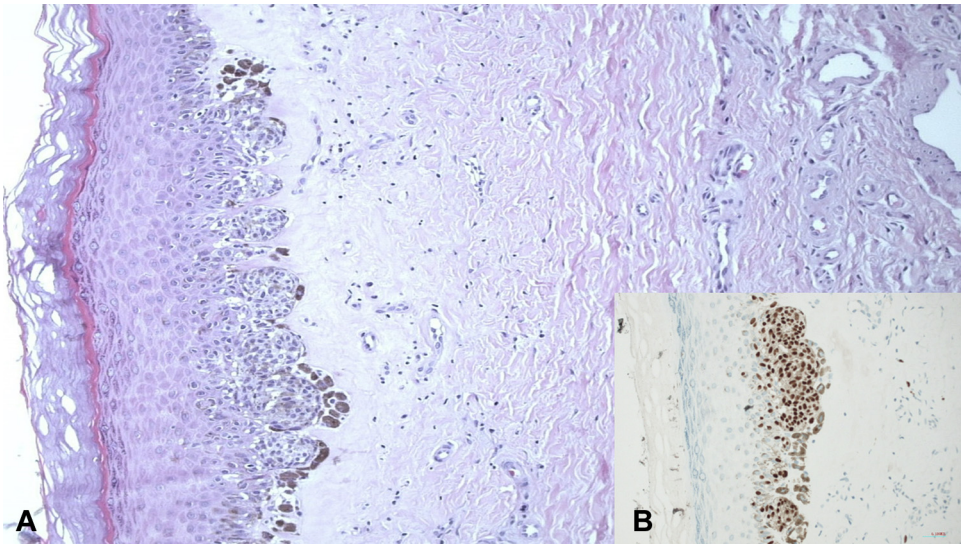

Fig 2. **A**, Atypical melanocytic proliferation on a background of hyalinized telangiectatic dermis consistent with lichen sclerosus. **B**, Cytologically bland melanocytes in an atypical nested and lentiginous pattern at the dermal-epidermal junction. (**A**, Hematoxylin-eosin stain; original magnification: ×100. **B**, Sox10 stain; original magnification: ×200.)

changes were consistent with lichen sclerosus. The pigmented lesion fulfilled the criteria for an atypical nevus superimposed on lichen sclerosus, which extended well beyond the borders of the pigmentation. The surgical borders were not clear, and the patient was offered re-excision, which he refused because of the sensitive anatomic location and possible complications of abnormal urinary stream. Follow-up after 3 months showed no recurrence of the nevus.

DISCUSSION

Genital nevi pose a diagnostic challenge because they may be characterized by irregular borders and variegated colors and reach large diameters, which are features that overlap with those of malignant melanomas; however, accurate diagnosis is imperative because malignant melanoma is a differential diagnosis with potentially severe consequences.[2] Melanocytic proliferation and lichen sclerosus have been reported to co-occur in women,[6] although concomitant lichen sclerosus and melanocytic proliferations are not well described in male genitalia, with only a few case reports existing.[3,7,8] The stronger association between lichen sclerosus and nevi in female patients may be due to a higher prevalence of the former on female genitalia.

To differentiate malignant melanomas from genital nevi superimposed on lichen sclerosus, Carlson et al[6] and El Shabrawi-Caelen et al[3] suggested a set of key histopathologic characteristics. In this case, histopathologic features were melanocytic nests, which varied in size and form, occasionally showing confluence; single-cell melanocytic proliferation at the dermal-epidermal junction, but not in continuous rows; and a few intraepidermal melanocytes high in the epidermis in the center of the lesion. These findings were in line with those described in previous literature for genital nevi superimposed on lichen sclerosus in female patients, with proliferative activity in melanocytes, demonstrating a "pseudomelanoma"-type confluence in the dermal-epidermal junction.[3,6]

In addition to lichen sclerosus, nevi arising on damaged skin in the setting of epidermolysis bullosa show histologic and clinical signs of pseudomelanoma, in which a unifying factor most likely is damage to the dermal-epidermal junction.[9] Difficulties in the interpretation of histopathology seem to overlap in both sexes if the dermal part of a compound nevus, located in the altered stroma of lichen sclerosus, exhibits signs of proliferative activity presumed to be induced by inflammation and scarring, although there is still controversy about how to interpret these changes in general.[3-6] In female patients, the pathomechanism behind this association is speculated to be mediated by free radicals caused by lichen sclerosus–induced scarring and ischemia in the dermis. Whether the pathomechanism is similar in male patients remains unclear because of the few existing cases.[7,10]

In conclusion, melanocytic proliferation on genitalia provides a diagnostic challenge because of similarities in clinical appearance to malignant melanomas. Histopathologic differences can aid in distinguishing benign from malignant lesions; however, none are pathognomonic and excisional biopsy can be beneficial to ensure a correct diagnosis.

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