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Squamous cell carcinoma on neglected lichen sclerosus of the glans: When one disease hides another

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Abstract
We report the case of a 45-year-old Moroccan man with a history of neglected lichen sclerosus of the glans, who presented with a penile tumor. Clinical examination revealed an ulcerated, exophytic keratotic lesion overlying a sclerotic, hypopigmented plaque. A biopsy performed at the junction of the lesion and underlying plaque confirmed a well-differentiated, infiltrating squamous cell carcinoma. Staging with thoraco-abdomino-pelvic CT scan showed bilateral pathological lymphadenopathy in the inguinal and pelvic regions. The patient underwent partial penectomy with bilateral lymph node dissection. Histological examination showed no lymph node involvement. Postoperative recovery was favorable, allowing for penile reconstruction three months later.
This rare case highlights the importance of regular monitoring in patients with lichen sclerosus, due to its potential progression to differentiated intraepithelial neoplasia and invasive squamous cell carcinoma.

Keywords: Lichen sclerosus, squamous cell carcinoma, glans penis, Intraepithelial neoplasia, partial penectomy, dermatological monitoring

Introduction
Lichen sclerosus (LS) is a rare chronic inflammatory dermatosis predominantly affecting the male genital area. Clinically, it presents as atrophic, sclerotic white plaques with an insidious course. When neglected, LS can progress to severe complications, notably invasive squamous cell carcinoma (SCC) of the penis, especially the glans [1]. The risk of malignant transformation of LS is estimated between 2% and 8%, which justifies regular clinical monitoring [2, 3]. We report a case of squamous cell carcinoma of the glans arising on neglected LS, illustrating the potential severity of this often-underdiagnosed condition.

Case report
A 45-year-old Moroccan man, married and father of three children, living in an urban setting, with a history of neglected lichen sclerosus of the glans, presented with a glans tumor. Dermatological examination revealed an ulcerative, exophytic tumor with a keratotic surface and infiltrated base, located on a porcelain-like hypopigmented plaque with a sclerotic consistency. The lymph node areas were clinically unremarkable.
A biopsy was performed at the junction between the tumor and the underlying plaque, revealing a well-differentiated, infiltrating squamous cell carcinoma of the glans. Histological examination showed a proliferation of polyhedral carcinomatous cells with well-defined, cohesive cytoplasmic borders, multiple cytonuclear atypia and mitoses, arranged in confluent lobules and anastomosing cords, with squamous maturation in the form of keratin pearls.
Staging with thoraco-abdomino-pelvic CT scan revealed bilateral pathological lymphadenopathy in the inguinal, superficial femoral, and external iliac regions. The patient underwent a partial penectomy along with bilateral lymph node dissection. Histopathological analysis showed no lymph node involvement. The postoperative course was favorable, allowing for penile reconstruction three months after the initial surgery.

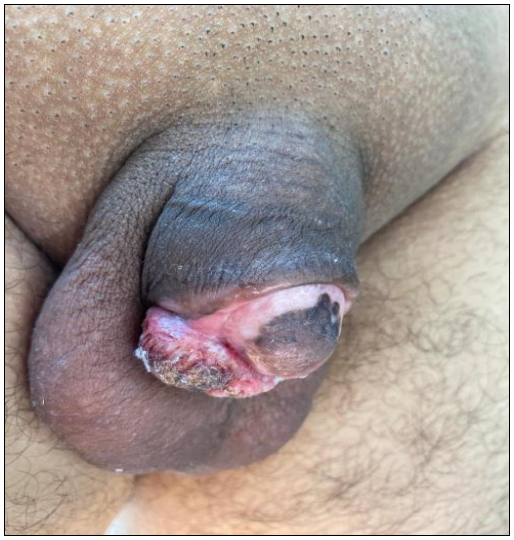

Fig 1: Ulcerative and budding tumor of the glans on sclerotic-atrophic lichen

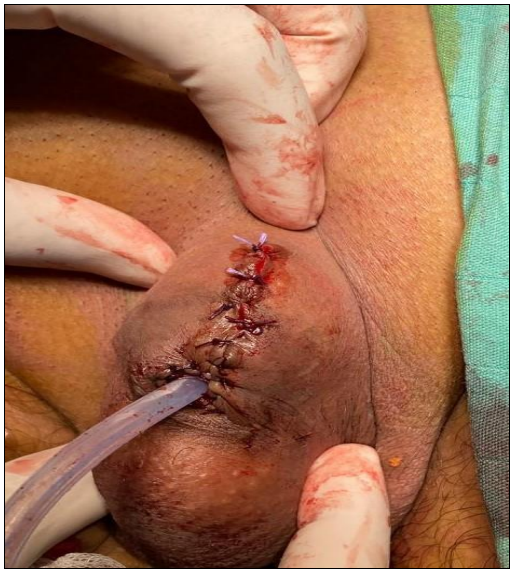

Fig 2: Penectomy with excision of the tumor and the sclerotic-atrophic bed

Discussion

Male genital LS represents an oncogenic condition, especially when it evolves for several years without treatment [2, 4]. It has been shown that chronic inflammation, alterations in epidermal architecture, and remodeling of the underlying connective tissue favor the development of intraepithelial neoplasia, which may progress to invasive squamous cell carcinoma [5, 6]. Barbagli *et al*. reported malignant transformation in 8.4% of LS cases in a series of 130 patients [7]. A recent Danish study confirms this risk, with a 16-fold increased incidence of penile cancer in patients with LS [8].

While some squamous cell carcinomas are linked to oncogenic human papillomavirus (HPV) infections, especially types 16 and 18, those associated with LS are generally HPV-negative [3, 9]. These cases follow a distinct carcinogenic pathway, often marked by p53 mutations, persistent inflammation, and keratinizing proliferation (10). Before the development of invasive carcinoma, an intraepithelial neoplastic stage called differentiated PeIN (dPeIN) can be observed. It is considered the precancerous lesion associated with LS [6]. This form is often underdiagnosed due to its nonspecific clinical appearance and requires biopsy for confirmation [11].

Initial treatment of LS relies on potent topical corticosteroids (clobetasol propionate) as first-line therapy. However, in case of suspicious lesions, biopsy should be performed promptly [1, 11]. For confirmed malignant transformation, treatment is based on surgery adapted to tumor extension: partial or total penectomy, lymph node dissection, and reconstruction if necessary [6]. In our case, a partial penectomy with bilateral lymphadenectomy was performed, with favorable postoperative outcomes.

Conclusion

Lichen sclerosus of the glans is a chronic condition that can evolve into squamous cell carcinoma in the absence of adequate management. This case highlights the necessity of early diagnosis, regular monitoring, and biopsy in case of clinical suspicion. Particular attention must be given to lesions resistant to treatment due to the risk of malignant transformation. Multidisciplinary collaboration between dermatologists, urologists, and pathologists is essential for optimal patient care.

Statement of Ethics

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Acknowledgments

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