Surgical and Experimental Pathology

CASE REPORT Open Access

Penile squamous cell carcinoma and lichen planus

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Abstract

Background: Penile squamous cell carcinoma (PSSC) has some non-PHV associated precursos and lichen planus is not considered one of them.

Case presentation: A 78-year-old patient sought the urologist due to a history of erythema on glans for 12 months and growing mass for 6 months treated with different topical medications. Partial penectomy was performed with finding of squamous cell carcinoma usual / keratinizing type with invasion of glans (pT2) and presence of extensive differentiated PeIN in adjacent areas. Adjacent to PeIN areas, there was an inflammatory reaction typical of lichen planus. This lichenoid reaction was present in the periphery of the large mass and also in a separate hyperkeratotic plaque at the glans. No features of HPV infections or balanitis xerotica obliterans were detected on histologic analysis.

Conclusion: We report a case with rapid evolution (6 months) between inflammatory signs of penile disease to mass forming lesion. This report call attention to this potential association – describing the association with invasive squamous carcinoma. Treatment-resistant longstanding cases of lichen planus should be biopsied. Prospective studies of patients with penile lichen planus are warranted to evaluate the magnitude of the risk of progression to penile carcinoma.

Keywords: Penile neoplasms, Lichen Planus, Pathology

Background

Penile squamous cell carcinoma (PSSC) is a rare disease currently classified into different morphology types grouped into two major categories based on the association or not with human papillomavirus (HPV) infection(Cubilla et al. 2018). Among those unassociated with HPV, the most common subtype is usual (keratinizing) PSCC which is commonly associated with penile intraepithelial neoplasia of the differentiated type (differentiated PeIN). Among premalignant conditions unrelated to HPV, balanitis xerotica obliterans (variation oflichen sclerosis et atrophicus), Bowen's disease, Erythroplasia of Queyrat and Bowenoid papulosis are well known.

Case presentation

A 78-year-old patient sought the urologist due to a history of erythema on glans for 12 months and growing mass for 6 months treated with different topical medications. The patient reported pain and bleeding from the mass. Physical examination showed a 4.0 × 3.0 × 1.5 cm exophytic tumor between glans and foreskin. Partial penectomy was performed with finding of squamous cell carcinoma usual / keratinizing type with invasion of glans (pT2) and presence of extensive differentiated PeIN in adjacent areas. Adjacent to PeIN areas, there was a typical lichenoid inflammatory pattern of skin involvement with hyperkeratosis, acanthosis, sawtoothing of rete pegs, bandlike chronic inflammatory infiltrate, apoptotic basal cells, artifactual cleft formation between epidermis and papillary dermis and presence of melanophages in the infiltrate. Plasma cells were inconspicuous in the infiltrate. This lichenoid reaction was present in the periphery of the large mass and also in two non-contiguous lesions in the glans penis, grossly recognized

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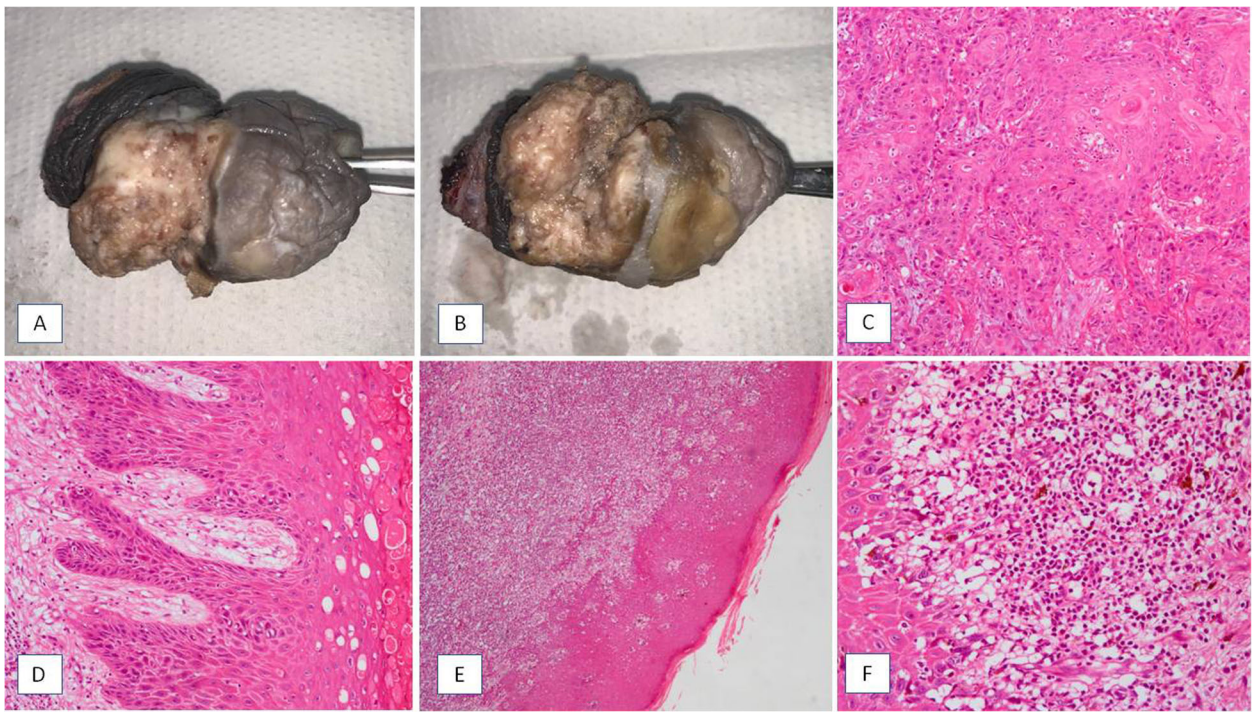

Fig. 1 **a** Gross specimen withexophytic tumor between foreskin and glans; **b**) hyperkeratotic plaques separated from the tumor; **c**) invasive usual squamous cell carcinoma (HE, 100x); **d**) differentiated penile intraepithelial neoplasia (HE, 100x); **e**) lichenoid inflammation (HE, 40); **f**) lichenoid inflammation (HE, 400x)

as hyperkeratotic plaques measuring 2 cm and 1 cm in the largest diameter. No features of HPV infections or balanitis xerotica obliterans were detected on histologic analysis. See Fig. 1.

The expression of P16 protein (ECH4 Roche) was absent in the invasive and intraepithelial neoplasia. Ki67 expression (Mib1 Dako) was expressed in 10% of invasive cells and restricted to the lower third of the epithelium in differentiated PeIN. In situ hybridization did not detected DNA from low risk HPV (types 16/18/31/33/35/39/45/51/52/56/58/66 Ventana) and risk HPV (types 6 and 11 Ventana).

Discussion

To date, there is no clear association between penile lichen planus with PSCC. There are six previous reports in English literature – at least two of them with the histological confirmation of lichen planus in lesions before the evolution to carcinoma (Leal-Khouri andHruza 1994; Bain and Geronemus 1989; Cox 1996; Hoshi et al. 2008). Elsewhere in the skin, such association is also controversial. It is estimated that 1,9% of patients with oral lichen planus will undergo malignant transformation (Ingafou et al. 2006). In a series of 35 cases of penile intraepithelial neoplasia, one of 5 cases of Erythroplasia of Queyrat had concomitant lichen planus (Porter et al. 2002). In a series of 29 cases of scrotal SCC, concomitance with lichen planus was found in one patient (Matoso et al. 2014).

Conclusion

We report a case with rapid evolution (6 months) between inflammatory signs of penile disease to mass forming lesion. This report call attention to this potential association – describing the association with invasive squamous carcinoma but also and for the first time, to the best of our knowledge, to differentialed PeIN.Treatment-resistant longstanding cases of lichen planus should be biopsied. Prospective studies of patients with penile lichen planus are warranted to evaluate the magnitude of the risk of progression to penile carcinoma.

Acknowledgements

None.

Adherence to national and international regulations

Not applicable.

Authors' contributions

DAA conceived the idea. DAA was the major contributor to the writing of the manuscript. MLOL and LRPJA participated in the surgical treatment surgery. DAA, SCS and BCAS diagnosed the case. MLOL were major contributors for critically revising the manuscript for important intellectual content. MLOL, BCAS, SCS and LRPJA has given expert opinion and final approval of the version to be published. All authors read and approved the final manuscript.

Funding
This study had no funding resources.

Availability of data and materials
All data generated or analyzed during this study are included in thispublishedarticle.

Ethics approval and consent to participate
Written informed consent was obtained from the patient for participation in the study.

Consent for publication
The authors declare that they have no competing interests.

Competing interests
The authors declare that they have no competing interests.

Received: 7 September 2019 Accepted: 25 November 2019
Published online: 15 January 2020

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