VERRUCOUS CARCINOMA ARISING FROM HYPERTROPHIC LICHEN PLANUS

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Summary

Hypertrophic lichen planus is a particular morphologic form of lichen planus. The lesions are persistent, continuously scratched because they are very itchy and were rarely reported at the origin of squamous cell carcinoma. To evaluate the morphological aspect of the malignant degeneration of hypertrophic lichen planus. Skin biopsies from a patient with long-standing lichen planus and secondary squamous cell carcinoma were fixed in 10% formaldehyde, then embedded in paraffin, sectioned, stained with hematoxylin-eosin and analyzed at the optic microscope. The histological aspect was correlated with the clinical presentation. The squamous cell carcinoma developed over areas of long-standing lichen planus was of verrucous type. The patient benefit from surgical treatment, had no lymph node involvement and no recurrences at 18 months follow-up. Chronic inflammation and trauma could be involved in the neoplastic transformation of the hypertrophic form of lichen.

Key words: hypertrophic lichen planus, verrucous squamous cell carcinoma

Introduction

Hypertrophic lichen planus is a particular morphologic form of lichen planus (LP). It usually affects the lower limbs and manifests as verrucous plaques with variable amounts of scale. Lesions continue for months or years, averaging approximately 8 years, and may be perpetuated by scratching. After the lesions clear, a dark-brown pigmentation remains.

Cutaneous LP is not associated with an increased risk of carcinoma (Sigurgeirsson and Lindelöf, 1991), but a few cases were reported to develop over areas of hypertrophic lichen planus (Ardabili et al, 2003; Hodzic-Avdagic et al, 2004; Kaulich et al, 2003; Gawkrodger et al, 1994; Castaño et al, 1997; Bonnekoh et al, 1986). Squamous cell carcinoma (SCC) has been frequently described to develop from oral lichen planus lesions (Moncarz et al, 1993) and rarely from vaginal lichen sclerosus (Hagedorn M et al, 2003), penian (Hoshi et al, 2008; Alvarez et al, 2006) and anal LP (Fundaro et al, 1998).

We evaluate the morphological aspect of the malignant degeneration of long-standing hypertrophic lichen planus.

Material and methods

Skin biopsies were obtained from a patient (47 years old male) with long-standing hypertrophic lichen planus associated with squamous cell carcinoma. The skin samples were fixed in 10% formaldehyde, then embedded in paraffin, sectioned, stained with hematoxylin-eosin and examined at the optic microscope. The histological aspect was correlated with the clinical presentation of the patient.

Results

The excision biopsy of a hypertrophic lichen planus nodule presented epidermal hyperplasia with “saw-tooth” pattern, destruction of the basal layer with necrotic keratinocytes in the superficial dermis, known as “Civatte bodies” (cytoid bodies, colloid bodies) (Fig.1), dense, band-like inflammatory infiltrate with
lymphocytes and melanocytes in the superficial dermis, marked epidermal hyperplasia with orthokeratosis and focal hypergranulosis (Fig.2).

The patient presented multiple hyperkeratotic nodules (0.5-1 cm diameter) and verrucous plaques on both lower legs (a higher number on the calves and a lower number on the hips) that were very itching and long-standing (about 12 years old).

Some of the lesions were excoriated after intermittent scratching, others were covered by variable amount of scales (Fig.3).

Skin biopsies taken from the tumor showed squamous cell carcinoma (SCC) of highly differentiated type (verrucous type), characterized by marked hyperkeratosis, parakeratosis, hypergranulosis (Fig.4 and 5); within the tumoral islands, the keratinization is abundant, intercellular bridges apparent, pleomorphism and mitotic activity are minimal (Fig.6); extensively keratinized squamous epithelium forms broad, bulbous processes that infiltrate the reticular dermis (Fig.7).

As compared to warts which are exophytic, in verrucous SCC broad blunt processes invade underlying tissues (Fig.8).
The tumor with the histological aspect described above started to grow and increased gradually in size on the left shin about 8 years after hypertrophic lichen planus appeared. At the moment of the presentation, beside numerous nodules and plaques of hypertrophic lichen planus, there was a large (16/13 cm) ulcerated and exophytic tumor with marginal warty keratosis and central ulceration covered by abundant purulent secretion with foul smell because of bacterial superinfection (Fig 9).

**Discussion**

The histopathological aspect of lichen planus might be confused with lichenoid reactions commonly seen as host response to skin malignancies, including SCC. Lichenoid reaction that appears in this setting has a short history, compared to the long-standing hypertrophic lichen planus that can result in SCC (Kossard et al, 2004).

Verrucous carcinoma is a sub-type of low-grade squamous cell carcinoma that presents as warty masses, usually on the plantar aspect of the foot (epithelioma cuniculatum) or in the genital area (giant condyloma of Buschke-Lowenstein tumor) although it may appear anywhere, as a slowly enlarging cauliflower-like mass (James et al, 2006). It is locally usually aggressive (Fitzpatrick et al, 1993) but in rare cases metastatic spreading results (Leitão et al, 1981; Ardabili et al, 2003).

The carcinogenic factors that could be involved are the chronic inflammation and the traumatism, as there was no history for other known factors in our patient, like arsenic treatment (Leitão et
al., 1981), X-ray (Bonnekoh et al., 1986), varicose ulcer, lupus vulgaris scar, burn scar (Schwartz et al., 1993).

The prognostic of SCC is influenced by the degree of differentiation, the size and the depth of the tumor. It is known that a tumor size larger than 2 cm doubles the recurrence rate and triples the metastatic rate (Ardabili et al., 2003).

Our patient had a variant of a highly differentiated SCC, which is known to have a relatively low risk for metastatic disease. This proved to be true by now, in spite of the long evolution of the tumor (at least 4 years) and increased dimensions.

Conclusions

The transformation of hypertrophic lichen planus into verrucous carcinoma is a possible, although rare situation.

Chronic inflammation and trauma could contribute to this evolution to malignancy.

Therefore lesions of hypertrophic lichen planus that are resistant to treatment should be viewed with great suspicion and biopsy performed to rule out squamous cell carcinoma.

References


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