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Porocarcinoma Concurrent with Psoriasis Vulgaris: The First Report

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ABSTRACT

Psoriasis is a common chronical inflammatory skin disease with a prevalence of 2%–4% worldwide. In contrast, porocarcinoma is a relatively rare cutaneous neoplasm and an associated localization of both lesions is rare. Here, we describe the first case of porocarcinoma in a patient with psoriasis. A 71-year-old Japanese man was referred to our clinic for evaluation of nodule within a keratotic plaque of 20-years history on his leg. Histopathological examination showed that the plaque revealed acanthosis with regular elongation of rete ridges, agranulosis and the presence of Munro microabscesses. In contrast, massive proliferation of atypical poroid cells and a few cuticular cells in the dermis were seen in the nodule. We speculated that it is likely the porocarcinoma was caused by the elevated risk of skin cancer due to chronic inflammatory process of psoriasis itself in our patient.

Key words malignant eccrine poroma; porocarcinoma; psoriasis vulgaris; skin cancer

It is known that psoriasis is sometimes accompanied by skin cancer.[1–4] We report here the first case of porocarcinoma in a patient with psoriasis vulgaris.

PATIENT REPORT

A 71-year-old Japanese man was referred to our department for evaluation of a nodule on his leg. He had been aware of the verrucous lesion for 20 years and it had been rapidly enlarging for 1 year. He had been treated with a topical steroid and vitamin D3 ointment for psoriasis for 8 years. However, he had no past history of phototherapy, oral administration of cyclosporine or etretinate, or treatment with biologics. Physical examination revealed a reddish-brown nodule with partial erosion (2 × 2.5 cm in diameter) within an erythematous keratotic plaque on his left lower leg (Fig. 1a). He had similar erythematous keratotic plaques on his head, trunk and extremities. We suspected that the nodule was squamous cell carcinoma, atypical fibroxanthoma or malignant lymphoma. We performed skin biopsies from the plaque (Fig. 1a: arrow) and nodule (Fig. 1a: arrow head). Histopathological examination of the plaque revealed acanthosis with regular elongation of rete ridges, agranulosis and the presence of Munro microabscesses (Fig. 1b and c). In contrast, massive proliferation of atypical poroid cells and a few cuticular cells in the dermis were seen in the nodule (Figs. 1d and e). The poroid cells had oval-to-round nuclei, inconspicuous nucleoli, and scant cytoplasm. In contrast, cuticular cells were situated around lumina of the ducts and having larger nuclei and abundant pink cytoplasm. Most of the tumor components were seen in the dermis, but some of the tumors were sporadically continuous with the intraepidermal basal layer. Immunohistochemically, the tumor cells were positive for cytokeratin 7. MIB-1 index was more than 50% (Fig. 1f). Finally, a diagnosis of porocarcinoma in a patient with psoriasis vulgaris was made.

The tumor was resected with a 1-cm tumor margin in addition to a split skin graft. After the operation, there has been no recurrence for 4 years.

DISCUSSION

Porocarcinoma is a relatively rare cutaneous neoplasm (a rare malignant tumor of acrosyringium) and accounts for only 0.005% to 0.01% of cutaneous neoplasms.[5] It has been reported that immunosuppression is related to the pathogenesis.[6, 7] Clinically, the tumor presents as an erythematous-to-violaceous (a pink or flesh-colored papule) nodule or polyp on the extremities, especially the lower limbs.[8] Immunohistochemically, the tumor cells of porocarcionoma (especially intradermal type porocarcinoma) is positive for cytokeratin 7.[9] In our case, clinical features and histopathological findings were typical for (de novo) porocarcinoma. Although there was no histological pre-exisiting benign tumor (poroma), malignant transformation could not be ruled out due to the history of rapid enlargement in a short period.

Psoriasis is a chronic immune-mediated disease that is associated with several comorbidities and there

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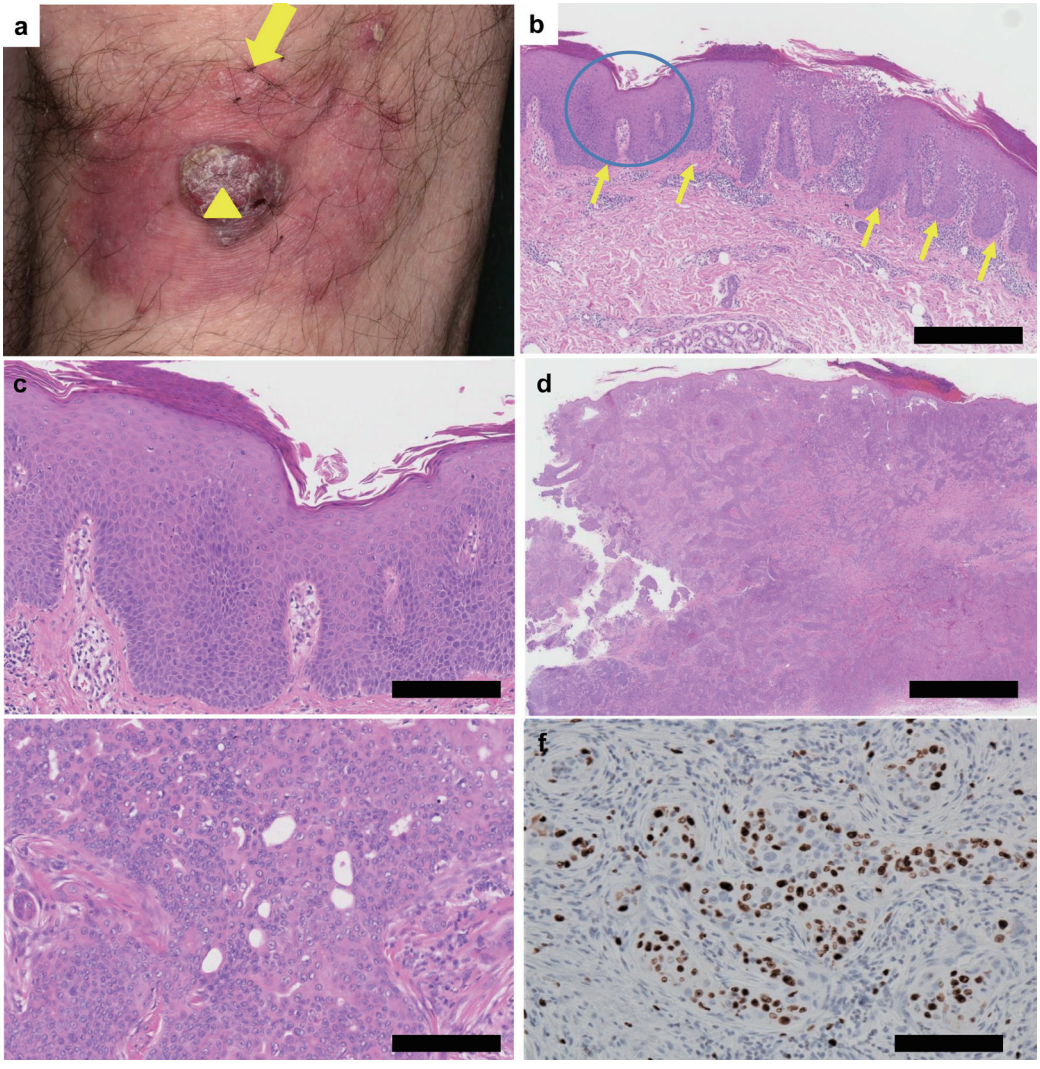

Fig. 1. (a) A reddish-brown nodule witerythematous keratotic plaque on the left lower leg. (arrow, b, green arrow head, d) **(b, c)** Histopathological examination showed acanthosis with regular elongation of rete ridges (arrow) and absence of a granular layer (circle, c) in the erythematous plaque (hematoxylin and eosin). Bar = 500 μm and 250 μm. **(d, e)** Massive proliferation of atypical poroid cells and a few cuticular cells in the dermis were seen in the nodule (hematoxylin and eosin). Bar = 5 μm and 250 μm). **(f)** MIB-1 index was more than 50%. Bar = 250 μm.

have been some reports of skin cancers that developed in patients with psoriasis.[1–4] Psoriasis is a hyperproliferative skin disease with an upregulated concentration of multitude cytokines. Under these conditions of chronic inflammation and hyperproliferation, the development and progression of skin neoplasm might be favored.[3, 4] Previous exposure to systemic treatment, including immunosuppressive drugs, methotrexate, cyclosporine, and UV radiation, has been shown to be associated with increased malignancy risk due to impaired immunosurveillance.[1] There is an elevated risk of squamous cell carcinoma in patients with psoriasis who have been treated with biologics such as treatment with anti-tumor necrosis factor-α (TNF-α) inhibitors, PUVA therapy and immunosuppressive treatments.[2]

We think it is important to report the occurrence of porocarcinoma in the patient with psoriasis. Basal cell carcinoma and squamous cell carcinoma are common skin cancers that are encountered in daily clinical practice. Although basal cell carcinoma could cause local recurrence or invasion, it rarely causes lymph node metastasis or distant metastasis.[10] With regard to squamous cell carcinoma, the regional lymph node metastasis rate is about 5% and the distant metastasis rate is 1%.[11] In contrast, it has been reported that porocarcinoma, which is clinically difficult to differentiate from squamous cell

carcinoma, has a local recurrence rate of 20% and a 20% risk of lymph node or distant metastasis.[8]

As far as we know, however, there has been no report of porocarcinoma in a patient with psoriasis. Since porocarcinoma is rare,[7] it is difficult to identify a causal relation. In our case, the patient had no history of phototherapy or systemic therapy including treatment with biologics. But it cannot be denied that the effect of the specific immune-mediated chronic inflammatory process of the psoriasis itself might be related to an increased risk of skin cancer.[4] Therefore, it is likely that the porocarcinoma was caused by the elevated risk of skin cancer due to psoriasis itself in our patient.

The authors declare no conflict of interest.

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