

## Syringocystadenoma Papilliferum and Eccrine Poroma Arising in Verrucous Epidermal Nevus: A Case Report and Multidimensional Skin Imaging Evaluation

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### Introduction

Verrucous epidermal nevus (VEN) is hamartoma characterized by hyperplasia of keratinocytes. Some cases of secondary tumors developing in VEN have been reported, but adnexal tumors are infrequent, especially coexistence of more than one type of adnexal tumors. We report a case of syringocystadenoma papilliferum (SCAP) and multiple eccrine poromas (EP) arising in a VEN, and the dermoscopic and ultrasonic features of these lesions.

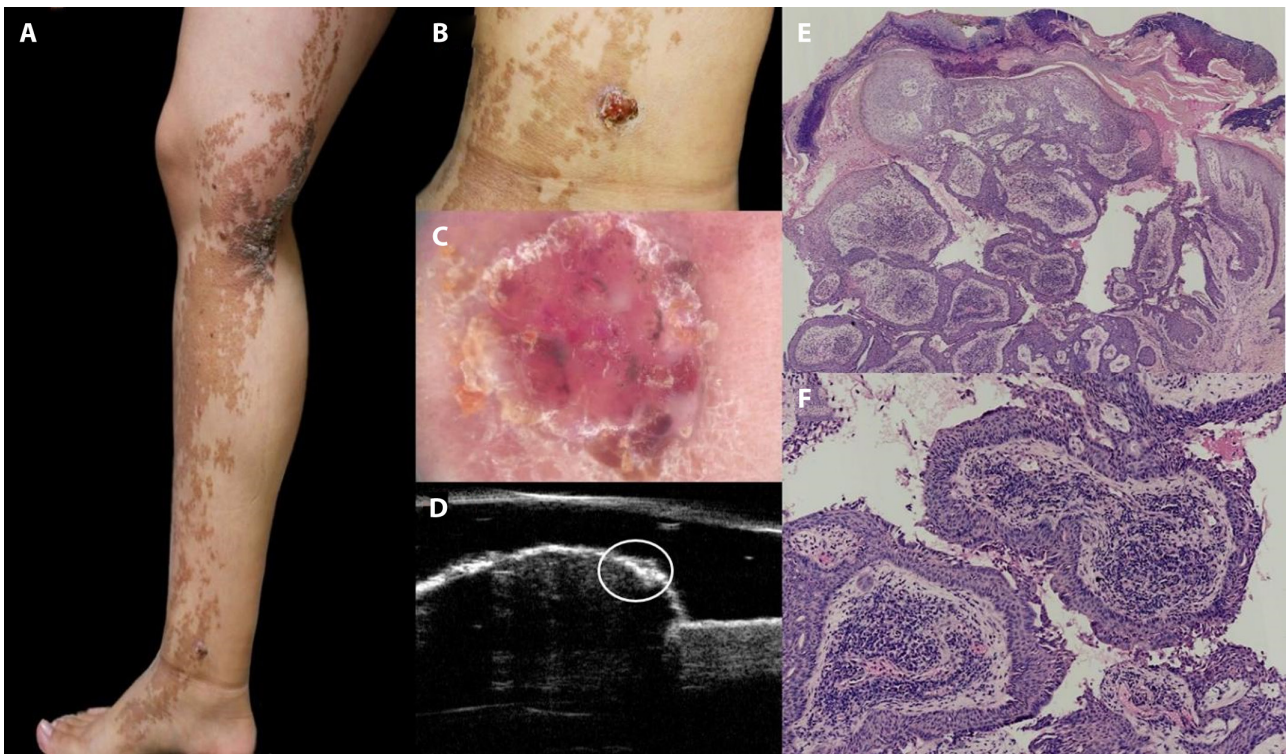
### Case Presentation

A 28-year-old woman had the band-like, light-brown verrucous plaque on her right leg since birth, with no symptoms.

Four years ago, a hemispherical nodule, with erosion and bleeding recurrently, and multiple pink to violaceous papules gradually developed on the preexisting lesion.

Clinical examination revealed a band-like, light-brown plaque, extending from the middle of the right thigh to the dorsum of the right foot. On the popliteal fossa, there was a black-brown verrucous hyperplastic plaque of 10 cm in length, without erosion or exudation (Figure 1A). Skin biopsy revealed VEN.

On the right medial malleolus, there was a red nodule of 1.5 cm in diameter with erosions and yellowish crusts (Figure 1B). Dermoscopy revealed pinkish-white ulcerated areas, polymorphic vessels and yellow crusts (Figure 1C). Ultrasound showed a superficial dermal lesion with regular shape, well-defined margin and heterogeneous internal echo,



**Figure 1.** (A) Clinical presentation: light-brown plaques extending from the middle of the right thigh to the right foot. (B) Clinical presentation: a red nodule of 1.5 cm in diameter on the right medial malleolus with erosions and yellowish crusts. (C) Dermoscopically, polymorphic vessels were seen within the pinkish-white ulcerated areas, with yellow crusts. (D) High-frequency ultrasound showed a superficial dermal lesion with regular shape, well-defined margin and heterogeneous internal echo, and superficial hyperechoic focus (white circle) (50 MHz). (E) Histopathology showed papillomatosis of the epidermis. Endophytic tumor extended from the epidermis with intraluminal papillary fronds (H&E staining; original magnification,  $\times 40$ ). (F) The fronds are lined by double-layered epithelium, with basal cuboidal cells and apical columnar apocrine cells. Dense infiltration of lymphocytes and plasma cells in the cores of fronds and decapitation secretion were noted (H&E staining; original magnification,  $\times 100$ ).

and superficial hyperechoic focus (Figure 1D). Histopathologic examination revealed endophytic tumor extended from the epidermis with intraluminal papillary fronds, which were lined by a bilayer. Dense infiltrate of lymphocytes and plasma cells and decapitation secretion could be seen (Figure 1, E and F). It was consistent with SCAP.

On the medial of the right lower leg and knee, there were 3 pink to violaceous papules (Figure 2, A and B). Under dermoscopy, white streaks, short linear, coiled and looped vessels with yellow background were observed (Figure 2C). Ultrasound showed well-defined, oval-shaped dermal lesions with heterogeneous internal echo and hyperechoic spots (Figure 2D). These papules had a similar appearance under microscopy. Well-circumscribed dermal neoplasms continuous with the epidermis. Ductal differentiation was noted. (Figure 2, E and F). The diagnosis of EP was made.

The tumors were resected and the patient was still under follow-up.

## Discussion

VEN derive from hyperplasia of keratinocytes, unlike organoid epidermal nevi, secondary tumor is relatively infrequent,

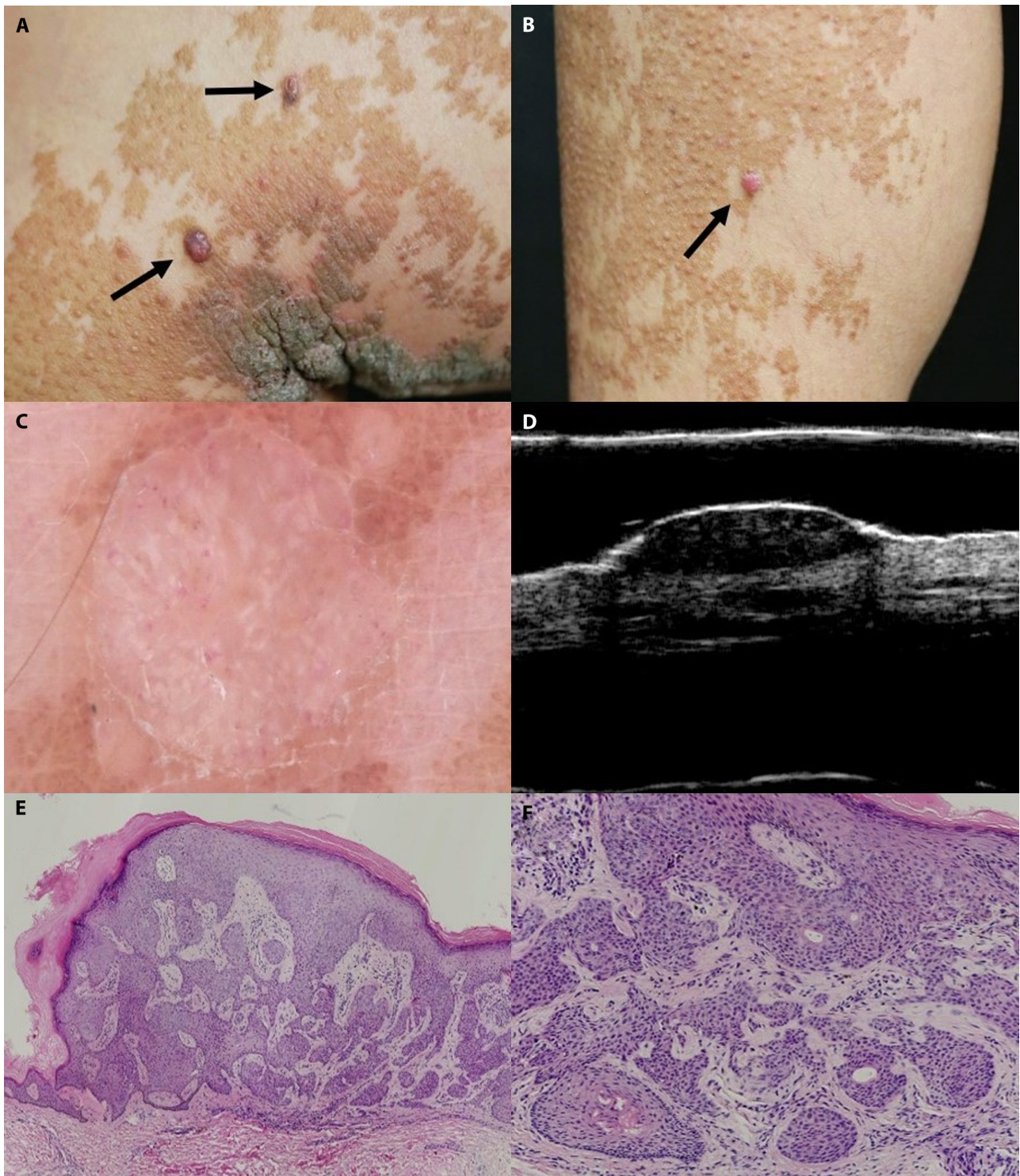
and most of them are epithelial tumors [1,2]. However, SCAP and EP are both benign adnexal neoplasms, which are quite rare in VEN. To the best of our knowledge, the case of SCAP and EP successively developed in a VEN has not been documented previously.

We applied non-invasive skin imaging techniques in the diagnosis. We observed the dermoscopic feature of polymorphous vascular pattern, a sign of malignancy. It indicated a biopsy should be performed. The ultrasound showed the lesions were in the superficial dermal with well-defined margin, which indicated that they tended to be benign conditions and helped assess the excision extension.

## Conclusions

We reported a quite rare case of SCAP and EP arising in a VEN. We applied dermoscopy and high-frequency ultrasound in the evaluation, and demonstrated the multidimensional skin imaging features of SCAP and EP.





**Figure 2.** (A,B) Clinical presentation: 2 violaceous papules on the medial of the right knee, and one pink papule on the lower leg (black arrows). (C) Dermoscopy showed white streaks, short linear, coiled and looped vessels, with yellow background. (D) Ultrasound revealed a well-defined, oval-shaped dermal lesion with heterogeneous internal echo and hyperechoic spots (50 MHz). (E) Epitheliomatous hyperplasia of the epidermis, well-circumscribed dermal neoplasms continuous with the epidermis. Inflammatory cells infiltrated in the superficial dermis (H&E staining; original magnification,  $\times 40$ ). (F) Ductal differentiation was noted (H&E staining; original magnification,  $\times 100$ ).

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