

Friable Warty Plaque on the Heel

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A 31-year-old man presented with a large friable and warty plaque on the left heel. He recalled that the lesion had been present since birth as a flat red birthmark that grew proportionally with him. Throughout his adolescence its surface became increasingly rough and bumpy. The patient described receiving laser treatment twice in his early 20s without notable improvement. He wanted the lesion removed because it was easily traumatized, resulting in bleeding, pain, and infection. The patient reported being otherwise healthy.

What's the diagnosis?

- a. angiokeratoma circumscriptum
- b. deep fungal infection
- c. lichen simplex chronicus
- d. verrucous carcinoma
- e. verrucous hemangioma

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The Diagnosis: Verrucous Hemangioma

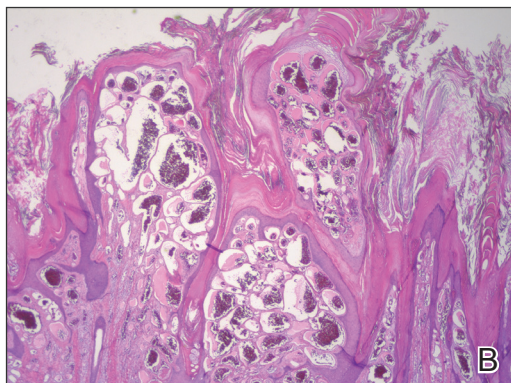
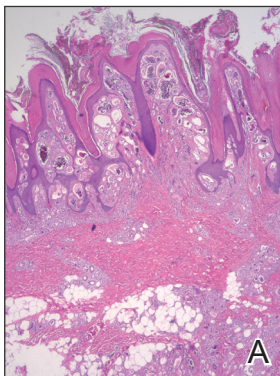
Verrucous hemangioma (VH) is a rare vascular anomaly that has not been definitively delineated as a malformation or a tumor, as it has features of both. Verrucous hemangioma presents at birth as a compressible soft mass with a red violaceous hue favoring the legs.^{1,2} Over time VH will develop a warty, friable, and keratotic surface that can begin to evolve as early as 6 months or as late as 34 years of age.³ Verrucous hemangioma does not involute and tends to grow proportionally with the patient. Thus, VH classically has been considered a vascular malformation.

On histopathology VH shows collections of uniform, thin-walled vessels with a multilamellated basement membrane throughout the dermis, similar to an infantile hemangioma (IH). These lesions extend deep into the subcutaneous tissue and often involve the underlying fascia. The papillary dermis has large ectatic vessels, while the epidermis displays verrucous hyperkeratosis, papillomatosis, and

irregular acanthosis without viral change (Figure).^{4,5} The superficial component can resemble an angio-keratoma; however, VH is differentiated by a deeper component that is often larger in size and has a more protracted clinical course.

Similar to IH, immunohistochemical studies have shown that VH expresses Wilms tumor 1 and glucose transporter 1 but is negative for D2-40.⁴ These findings suggest that VH is a vascular tumor rather than a vascular malformation, as was previously reported.⁶ Additional research has shown that the immunohistochemical staining profile of VH is nearly identical to IH, which has led to postulation that VH may be of placental mesodermal origin, as has been hypothesized for IH.⁵

Due to its deep infiltration and tendency for recurrence, VH is most effectively treated with wide local excision.^{3,6-8} Preoperative planning with magnetic resonance imaging may be indicated. Although laser monotherapy and other local destructive therapies have been largely unsuccessful, postsurgical laser therapy with CO₂ lasers as well as dual pulsed dye laser and Nd:YAG laser have shown promise in preventing recurrence.³



Large ectatic vessels extend into the deep dermis with overlying verrucous hyperkeratosis (A)(H&E, original magnification $\times 20$). The papillary dermis has large ectatic vessels, while the epidermis displays verrucous hyperkeratosis, papillomatosis, and irregular acanthosis without viral change (B)(H&E, original magnification $\times 40$).

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