

## Hyperkeratotic Plaque over the Ankle

A 7-year-old boy presented with a pigmented and itchy lesion over the right lateral malleolus. The lesion appeared during infancy and had shown slow and progressive growth to attain the present size. The child reported occasional bleeding from the pigmented surface following minor trauma. On examination, a solitary dark-brownish, well-circumscribed, hyperkeratotic plaque of 6 cm × 5 cm size was found over the right lateral malleolus [Figure 1]. The surface of the lesion appeared verrucous. The plaque was nontender, firm, noncompressible, and having an irregular surface on palpation. Incision biopsy of the lesion was suggestive of verrucous hemangioma (VH). The lesion was subsequently excised with adequate margins under general anesthesia. Primary closure of the defect was carried out by elevation of the local skin flaps. On follow-up at 3 months, the excised wound had healed properly with minimal scarring. Histopathological examination of the lesion revealed irregular acanthosis and hyperkeratosis of the basal layer of epidermis with dilated blood



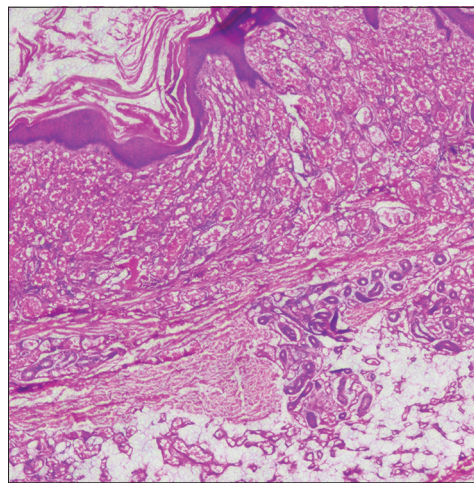
**Figure 1:** Lesion showing hyperkeratotic plaque with verrucous surface at lateral malleolus of the right leg

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vessels in deep dermis and subcutaneous fat [Figure 2].

VH is an uncommon vascular malformation of the skin and subcutaneous tissue. Imperial and Helwing in 1967 designated this entity as a congenital vascular malformation.<sup>[1]</sup> Since then, it has been reported with various synonyms such as hemangioma unilateralis neviforme, angiokeratoma circumscriptum, nevus vascularis unius lateralis, keratotic hemangioma, nevus angiokeratoticus, and nevus keratoangiomas. VH occurs predominantly on the lower extremity and is often unilateral.<sup>[2]</sup> The lesions are invariably noticed since birth or childhood but may also appear at a later stage of life. It usually starts as a bluish-red lesion and progresses to a bluish-black appearance having verrucous surface over the subsequent years.<sup>[3]</sup> The color change is due to the gradual deposition of hemosiderin over the vascular endothelium. The lesions have a tendency to extend peripherally and are notorious for easy



**Figure 2:** Photomicrograph showing epidermis with irregular acanthosis, elongation of rete ridges, parakeratosis, and hyperkeratosis with increased pigmentation of basal layer. Papillary dermis, deep dermis and subcutaneous fat show closely packed variably sized, thin walled, dilated blood vessels lined by flat endothelial cells. (H and E staining, ×20 magnification)

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bleeding following minor trauma. Recurrent episodes of bleeding and infection result in cutaneous changes such as papillomatosis and hyperkeratosis. In long standing cases, the lesions acquire a warty surface.<sup>[2]</sup>

Clinically, the differential diagnoses considered are angiokeratoma, angioma serpiginosum, lymphangioma circumscriptum, and pigmented tumors.<sup>[2]</sup> Biopsy of the lesion is essential to rule out other lesions that mimic VH as the treatment modality may be different for different conditions. On microscopic examination, VH shows cutaneous changes such as hyperkeratosis, variable degrees of epidermal acanthosis, and papillary telangiectasias overlying the dermal and subdermal vascular proliferation.<sup>[4]</sup> Involvement of the dermis and subcutaneous fat is typical of VH, as in our case, while involvement is limited only to the papillary dermis in angiokeratoma.<sup>[4]</sup> Angiokeratoma, being a relatively superficial lesion, respond favorably to nonexcisional therapies such as cryotherapy and argon laser ablation. VH does not resolve spontaneously and surgical treatment at an early stage is advantageous because of superior cosmetic outcome. Local excision with adequate margin followed by primary closure is adequate for smaller lesions. Flap

or graft coverage following excision of larger lesion is the recommended treatment. Particular attention should be paid for complete resection as these lesions are notorious to recur if the depth of excision is inadequate.<sup>[5]</sup>

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### *Conflicts of interest*

There are no conflicts of interest.

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