

Verrucous Haemangioma-A Case Report

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Abstract

Verrucous haemangioma is an uncommon skin lesion which increases in size and also evolves in appearance with time. Early diagnosis is important so that surgical treatment can be instituted early for better cosmetic results. Its similarities and differences to angiokeratoma circumscriptum are also highlighted, and the importance of distinguishing the two in terms of management is discussed.

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Introduction

Verrucous haemangioma is an uncommon congenital vascular malformation which may grow to large sizes. It has a characteristic hyperkeratotic and verrucous surface which resembles angiokeratoma circumscriptum. The diagnosis can be confirmed on histology and distinguishing the two is important because of the different treatment modalities.

Case Report

A 21-year-old Chinese woman presented to our department with extensive skin lesions over her left leg and lower abdomen. Most of the skin lesions had been present since birth and had grown progressively in size over the years. Other lesions appeared during the first three years of life. She had undergone excision and skin grafting of a small area over the dorsum of the foot at ages 3 and 7 in a neighbouring country. She presented with reports of increasing size of the lesions.

Examination revealed multiple erythematous plaques over her lower abdomen, anterior left thigh, medial left leg and dorsum of the foot. The lesions were dark purple in colour and had a hyperkeratotic appearance, with irregular surface and edges. In many areas crusting and ulceration were evident with pus-like discharge suggesting secondary infection.

Injection sclerotherapy was performed but with little improvement.

Magnetic resonance imaging (MRI) then showed the lesion to extend down to the subcutaneous tissue. The

patient subsequently underwent excision of the lesions over the thigh with skin grafting.

Sixteen months after surgery, the patient is happy with the outcome and there are plans to further excise the remaining areas of skin involvement.

Pathology

The macroscopic specimen comprised four ellipses of the skin measuring between 6.2 and 13 cm in the largest dimension. The attached subcutis averaged 1 to 2 cm in thickness. The skin surface had a greyish-blue hue with a soft lobulated to verrucous appearance. Serial sections revealed dermal congestion with small vascular channels that extended into the subcutis.

Microscopically, the skin disclosed hyperkeratosis, papillomatosis and acanthosis. Numerous thin-walled vessels, mostly ectatic capillaries, were present throughout the dermis. These vascular channels filled the papillary dermis in between flanking rete pegs. Congeries of vessels were also found in the fatty subcutis, reaching the soft tissue resection margin focally.

The histological features were of a verrucous haemangioma.

Discussion

Verrucous haemangioma is a distinct entity that is not commonly recognised. It is essentially a congenital vascular malformation which may be first noticed at birth or early infancy, usually on the lower limbs as a single patch. Initially, it appears as a blue-red, soft, smooth and

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Fig. 1. Multiple purplish lobulated plaques with a hyperkeratotic appearance over the left thigh and lower abdomen of the patient. Ulceration and crusting was evident in some areas.

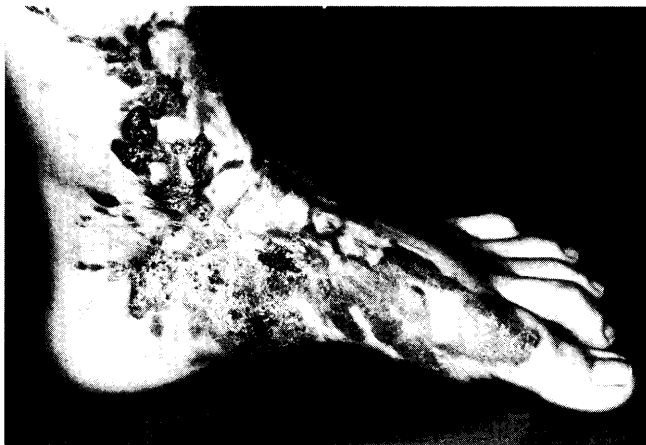


Fig. 2. Similar lesions over the patient's ankle which recurred after excision was performed at a young age. These lesions had a more verrucous surface compared to the lesions over the thigh and abdomen.

well-circumscribed lesion, very much like capillary haemangioma. However with time, it increases in size and gradually evolves to take on a dark purplish-red colour, with a hyperkeratotic and verrucous surface.^{1,2} Satellite nodules may be present.¹ Very often, secondary infec-



Fig. 3. Papillomatous, hyperkeratotic skin shows ectatic capillaries in the dermis, extending into the dermal papillae as well (Haematoxylin & eosin, x20).

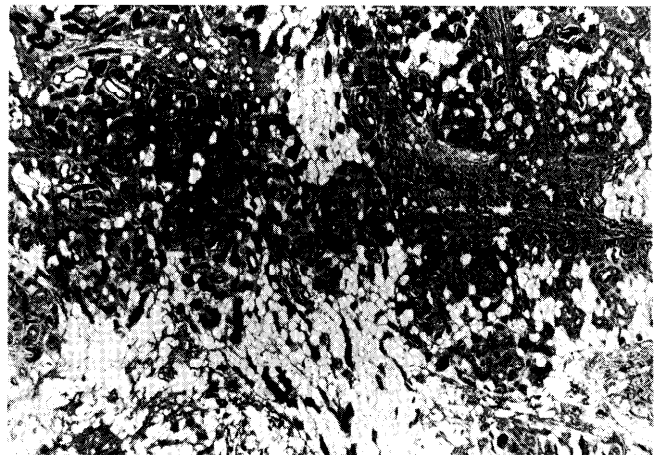


Fig. 4. Numerous congested capillaries are found in the subcutaneous fat (Haematoxylin & eosin, x40).

tion occurs and crusting or even purulent discharge from the crevices of the lesion may be observed. The change in appearance is thought to be accelerated by repeated trauma to the lesion, and possibly by secondary infection as well.²

Histologically, verrucous haemangioma is characterised by epithelial changes of hyperkeratosis, papillomatosis, and irregular acanthosis with vascular channels in the dermis extending into the subcutis. There may also be fibrosis extending down into the subcutaneous tissue.²

An important differential diagnosis of verrucous haemangioma is angiokeratoma circumscriptum. Angiokeratoma circumscriptum is one of five clinical types of angiokeratoma, first described in 1915 by Fabry. It is essentially a vascular ectasia, found usually in young girls, in a unilateral inferior limb.² It has a macroscopic appearance very similar to that of verrucous haemangioma, possessing a dark reddish-brown colour, warty and hyperkeratotic surface, with well-circumscribed edge. Histologically it is also similar in that it has fea-



Fig. 5. Results of skin grafting sixteen months after surgery. Small scattered areas of recurrence of the haemangioma over the skin graft—probably due to inadequate depth of excision during surgery.

tures of irregular acanthosis, papillomatosis and hyperkeratosis.^{3,5} However it can be distinguished from verrucous haemangioma by the limitation of the vascular component to the papillary dermis only and not beyond.^{1-3,6} In 1967, in a review of 175 cases of clinically diagnosed angiokeratoma, Imperial and Helwig² diagnosed verrucous haemangioma in 21 cases after reviewing the histopathological specimens, based on involvement of the deep dermis and subcutaneous tissue by the vascular component.

Most of the cases of verrucous haemangioma described previously were usually localised and confined

to a small area of the body, usually the lower limb. In 1989, Rossi et al reported 2 cases; the first was a 16-year-old patient with a 3 cm size lesion over the perimalleolar medial region of the left foot at birth which had increased to 7 cm in size at the time of presentation. The second patient was an 18-year-old woman with a 3 cm size lesion over the left knee present since birth. In both cases the lesions were excised and the diagnosis was confirmed on histopathologic examination.

The much larger extent of involvement of the leg and lower abdomen in our patient is unusual. How much of this is contributed by late presentation and repeated trauma is unknown, though it is likely from the history that extensive involvement of the skin was the case from the outset.

While angiokeratoma circumscriptum is easily amenable to local forms of treatment such as laser therapy and sclerotherapy, these methods will not be successful for patients with verrucous haemangioma, as demonstrated in this case. This is because of the deep extension of the haemangioma into the subcutaneous tissue. Repeated forms of local therapy may in fact result in further increase in size of the lesion and hyperkeratosis. Treatment should therefore include early diagnosis and complete surgical excision when the lesions are still small, for best cosmetic results. With larger lesions, as in this case, excision with skin grafting will be necessary. There may be concern that because the lesion is essentially a mixed capillary and cavernous haemangioma, attempts at excision may result in significant loss of blood. In our experience, however, bleeding was much less than that expected, and this may be contributed by fibrosis secondary to previous repeated secondary infection or trauma.

REFERENCES

1. Rossi A, Bozzi M, Barra E. Verrucous haemangioma and angiokeratoma circumscriptum: clinical and histologic differential characteristics. *J Dermatol Surg Oncol* 1989; 15:88-91.
2. Imperial R, Helwig E B. Verrucous haemangioma. *Arch Dermatol* 1967; 96:247-53.
3. Imperial R, Helwig E B. Angiokeratoma. *Arch Dermatol* 1967; 95:166-75.
4. Lever W F, Schaumburg-Lever G. *Histopathology of the skin*. 6th ed. Philadelphia: J B Lippincott, 1983:692-3.
5. Lynch P J, Kosanovich M. Angiokeratoma circumscriptum. *Arch Dermatol* 1967; 96:665-9.
6. Niechajev I A, Sternby N H. Cutaneous keratotic haemangiomas. *Scand J Plast Reconstr Surg* 1983; 17:153-4.