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Case and Review

An Atrophic Plaque with Arborizing Vessels

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Abstract
Dermatofibromas are a common finding in the daily clinical practice. Most lesions are found incidentally or because patients seek medical attention due to the aspect of the lesion. Rare variants of dermatofibroma such as aneurismatic or atrophic dermatofibroma can be encountered simultaneously; thus, these combined features may raise the possibility of other diagnoses to be considered. By providing diverse clinical and dermoscopic examples of dermatofibromas, we may prevent misdiagnosing these lesions. This case illustrates how two rare variants of dermatofibroma can coexist. Clinical presentation of dermatofibromas may vary greatly, and it is essential for dermatologists to recognize them clinically and dermoscopically before obtaining histopathological diagnosis.

Introduction

Dermatofibromas are a common finding in the daily clinical practice. Most lesions are found incidentally or because patients seek medical attention due to the aspect of the lesion. These dermal neoplasms do not carry any risks for the patient, but it is useful to be familiarized with the dermoscopic features for an expeditious identification. Rare variants of dermatofibroma such as aneurismatic or atrophic dermatofibroma can be encountered sim-

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ultaneously; thus, these combined features may raise the possibility of other diagnoses to be considered. By providing diverse clinical and dermoscopic examples of dermatofibromas, we may prevent misdiagnosing these lesions.

Case Presentation

A 40-year-old woman presented with a non-tender plaque on her left upper arm in the same location where a brown papular lesion had been present for 10 years. On dermatological examination, a 1.5-cm well-defined, erythematous, atrophic plaque was observed (fig. 1a). Dermoscopy revealed the presence of a pigment network, scar-like white patches, and arborizing vessels arising from a bluish homogeneous area resembling a 'flame pattern' (fig. 1b). An excisional biopsy of the lesion was performed and the histopathological diagnosis was consistent with an atrophic dermatofibroma with aneurismatic features (fig. 2).

Discussion

Dermatofibromas are benign dermal neoplasms that are represented clinically by a papule, a plaque or a nodule with or without pigment, measuring up to 2 cm in diameter [1]. Out of the various subtypes of dermatofibromas, the atrophic and aneurismatic variant represents 2% of the total [2, 3]. These rare occurring lesions seldom coexist, so features of both subtypes can be observed [4].

The differential diagnoses for the atrophic subtype include anetoderma, atrophic scar and sclerosing basal cell carcinoma. For the aneurismatic variant, melanoma and vascular tumors should be considered [4, 5].

For purposes of differentiating these lesions, age, location and size should be considered. Atrophic dermatofibromas are more frequently seen in older patients compared to the population with regular dermatofibromas, and their most common location is the upper extremities [6]. Aneurismatic dermatofibromas tend to be larger (0.5–4 cm) than other variants. This subtype is usually associated with pain or sudden enlargement because of intralesional hemorrhages [3].

Dermoscopic classification of dermatofibromas considers them within the non-melanocytic lesions. Classical dermoscopic features describe the presence of a central white patch, with a peripheral fine reticular pigmented network [2]. Regarding these unlikely variants, atrophic dermatofibroma shows the presence of multiple, small scar-like areas and pigmented network in a patchy distribution [4, 5]. Aneurismatic dermatofibroma presents a bluish, reddish homogeneous area, as well as vascular structures [4, 5]. In the present case, a large caliber vessel was observed during dermoscopic examination, a pattern not previously described. Arborizing vessels are a hallmark in basal cell carcinoma, but have also been described in some adnexal tumors, hence the particularity of this case.

To correctly identify these variants, histopathology is helpful. Atrophic dermatofibromas are composed of a mass of fibroblasts, histiocytes, capillaries, and collagen. The dermal thickness is usually half the size of the adjacent dermal tissue [7]. The aneurismatic variant exhibits foamy histiocytes, multinucleated giant, spindle, and stellate cells. The vascular component shows blood-filled spaces without endothelium but with the presence of telangiectatic endothelial-lined blood vessels in the periphery [8]. The extravasated erythrocytes account for the hemoglobin deposits in macrophages. This degraded hemoglobin is respon-

sible for the green pigment that may be observed in this type [9]. Histopathological classification is debatable, since some authors believe these variants are just transitional forms of dermatofibroma. For instance, some dermatopathologists believe that the hemosiderotic variant may be a preceding stage of an aneurismatic dermatofibroma [8].

Immunohistochemistry in dermatofibromas, is negative for factor XIIIa and CD34, and occasionally factor XIIa may be positive [3]. Aneurismatic dermatofibromas are positive for factor XIIIa in the periphery of the lesion, as well as for CD68 (stromal macrophages and giant cells). No staining is identified for factor XIIIa, CD34, CD31, CD68 or desmin in atrophic dermatofibroma [10]. Thus, positivity of factor XIIIa in this case may result from the aneurismatic component of the lesion.

Conclusion

Due to the atypical presentation of this lesion, excision and histopathological assessment was mandatory. This case illustrates how two rare variants of dermatofibroma can coexist and the clinician should not be alarmed by the features encountered. If there is any doubt regarding the nature of the lesion, then an excisional biopsy is recommended to differentiate it from non-benign lesions. Atrophic dermatofibromas with aneurismatic features are often misdiagnosed. Recognizing that large arborizing vessels can be encountered in atypical dermatofibromas may aid in expanding our dermoscopic differential diagnoses. Clinical presentation of dermatofibromas may vary greatly, and it is essential for dermatologists to recognize them clinically and dermoscopically before obtaining histopathological diagnosis. In this way, patients can be reassured of the less ominous diagnostic possibilities.

Statement of Ethics

Subjects have given their informed consent for the images, writing and publishing of the paper. No animal experiments were performed, nor was human research committee approval needed.

Disclosure Statement

The authors have no conflict of interest to declare. There were no funding sources.

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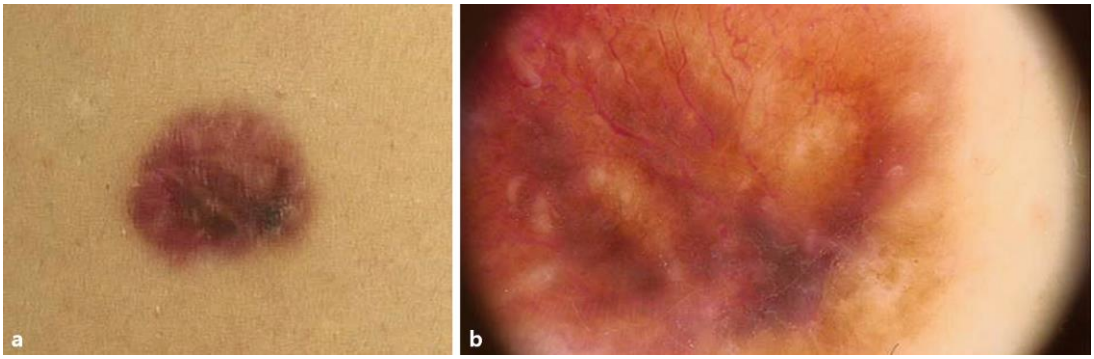

Fig. 1. **a** Clinical image of a well-defined, erythematous, atrophic plaque located on the left upper arm. **b** Dermoscopy revealing the presence of arborizing vessels (20× magnification) (medicam 800HD, Foto-Finder Universe version 2.0.29.1).

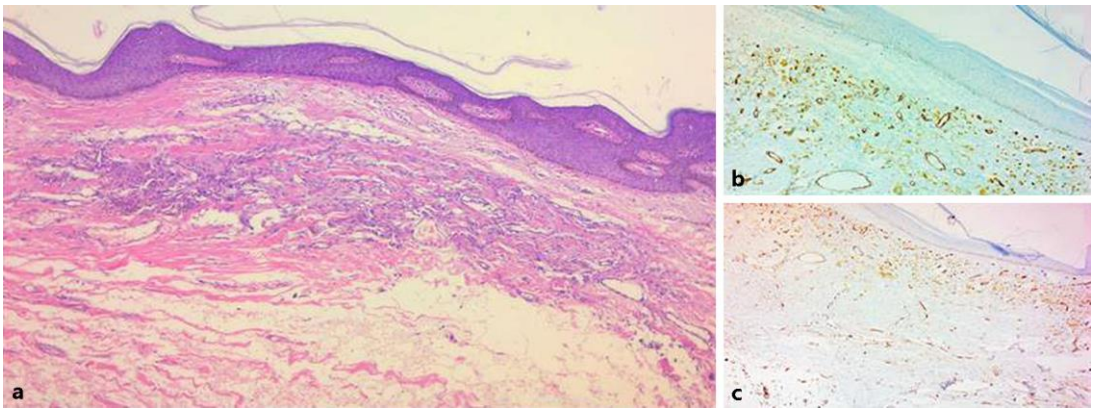

Fig. 2. **a** Histopathology exhibiting marked thinning of the dermis with epithelioid and spindle cells in a storiform pattern. **b** Immunohistochemistry showing CD34+ within vascular endothelium. **c** Factor XIIIa focally positive.