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Rare experience of keloidal dermatofibroma of forehead

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Dermatofibromas most commonly occur on limbs and rarely occur on the face. Dermatofibroma occurring on the face is associated with unusual clinicopathologic features and a more aggressive clinical course in comparison to typical cases. Additionally, the most common subtype found in previous studies was benign fibrous histiocytoma, with the keloid type being very rare (about 1% of reported cases). The aim of this study was to present our experience with a keloidal dermatofibroma of the face, which is usually missed clinically, and to discuss the treatment of a keloidal dermatofibroma in this location.

Keywords: Dermatofibroma / Keloid / Forehead / Differential diagnosis

Case Report

INTRODUCTION

Cutaneous dermatofibroma represents one of the most common benign soft tissue tumors, and its diagnosis is usually straightforward if classical clinicopathologic features are evident. According to previous reports, dermatofibroma most commonly occurs on limbs, and rarely occurs on the face. Dermatofibroma occurring on the face is associated with unusual clinicopathologic features and a more aggressive clinical course in comparison to typical cases. And also, the most common subtype known in previous studies is common fibrous histiocytoma, and keloid type is very rare (about 1%) [1]. The aim of this study is to present our experience with a keloid subtype dermatofibroma of the face, that is usually missed clinically, and to discuss the treatment of dermatofibroma in this location.

CASE REPORT

A 51-year-old woman visited Department of Plastic Surgery of Seoul St. Mary's Hospital with a nodular mass on her forehead that had been present for a long time (Fig. 1). There was no previous history of medication or trauma. The lesion was a nodular, hard, and non-tender mass, approximately 1×1 cm in size. Under local anesthesia, the authors performed a surgical excision with a wider margin than we commonly used for other benign tumors. A 1.2×1.2-cm-sized defect was covered with a full-thickness skin graft, with the left posterior auricular area as the donor (Fig. 2). Pathologic examination showed irregularly oriented, thick, eosinophilic collagen fibers and confirmed the diagnosis of keloidal dermatofibroma (Fig. 3). There was no evidence of recurrence af-

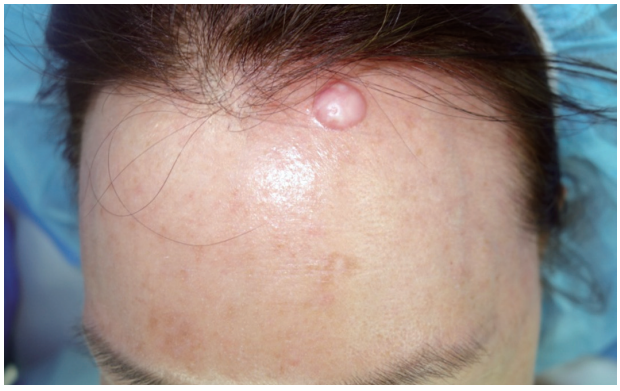

Fig. 1. An approximately 1×1-cm-sized, hard, non-tender, and nodular mass on the forehead.

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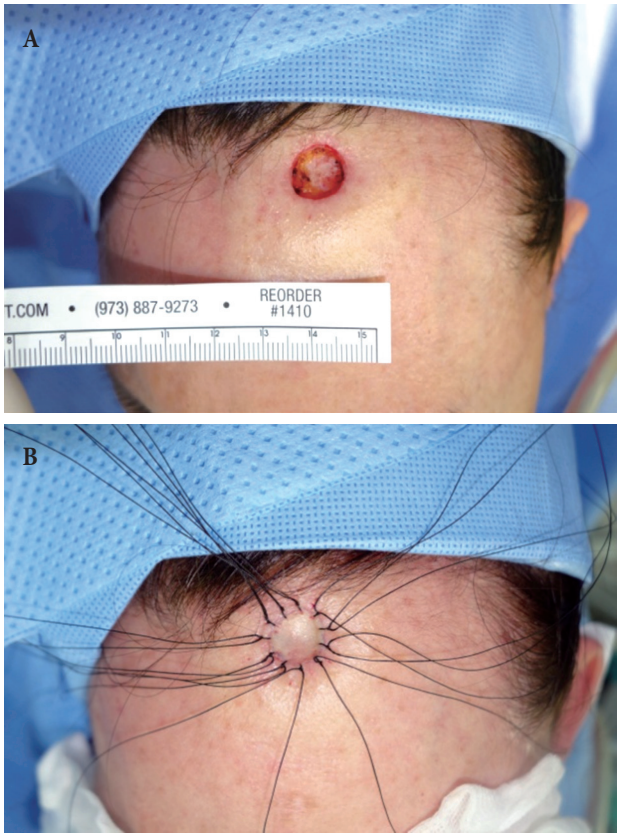

Fig. 2. (A) After excision of the mass, an approximately 1.2×1.2-cm-sized skin and soft tissue defect occurred. (B) The defect was covered with a full-thickness skin graft.

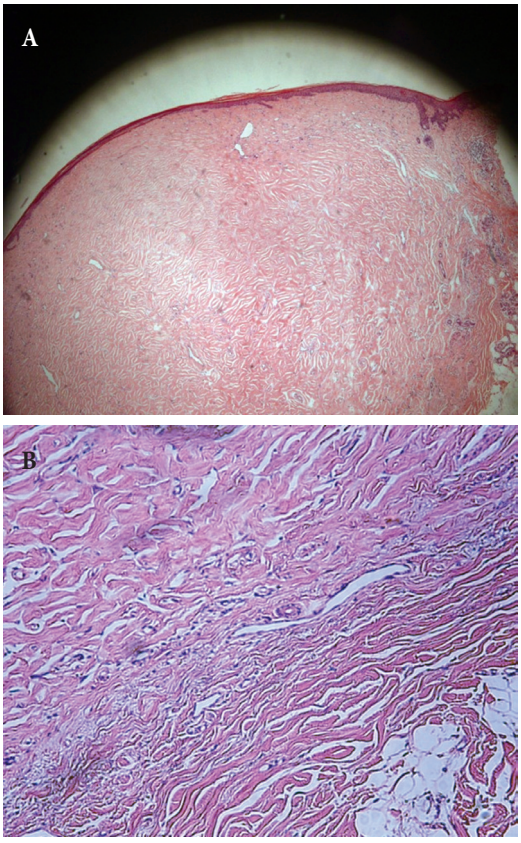

Fig. 3. (A) A keloid-like dermatofibroma with atrophic epidermis in low power field (H&E, ×40). (B) A circumscribed, keloid-like area with irregularly oriented, thick, brightly eosinophilic collagen fibers (H&E, ×100).

ter 3 months of follow-up (Fig. 4).

DISCUSSION

Dermatofibroma, also known as fibrous histiocytoma, is one of the most common mesenchymal neoplasms of the skin and usually occurs on the extremities. Fibrous histiocytoma of the face has been reported only very rarely. According to previous reports, most cases of fibrous histiocytoma of the face were more clinically aggressive variants.

As keloidal dermatofibromas are very rare, characteristics of this type of dermatofibroma are not well known. Clinically, typical dermatofibromas occur as firm reddish-brown nodules. In previous reports, keloidal dermatofibromas usually occur as erythematous, firm papules [2]. Histologically, typical dermatofibromas are known to generally present as nodular and well-circumscribed tumors composed of short spindle cells in a haphazard arrangement. Characteristic features of dermatofibromas are the presence of regular hyperplasia of the overlying epidermis and hyperpigmentation of basal cell layer [3]. On the other hand, ke-

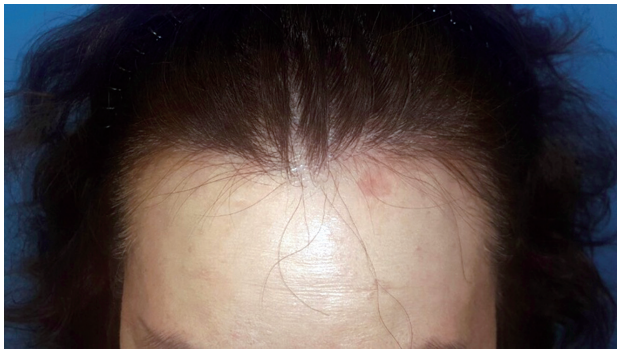

Fig. 4. At the 3-month postoperative follow-up, no recurrence of the tumor was observed. Also, well-matched skin color was observed.

loidal dermatofibromas present as circumscribed, keloid-like areas composed of irregularly oriented, thick, brightly eosinophilic collagen fibers in the superficial portion of the tumor. Circular keloidal collagenous fibers are also seen. And, like keloidal scars, elastic fibers are absent in keloidal dermatofibromas [2].

Because dermatofibromas often develop after minor trauma, the differential diagnosis should start with ruling out scar tissue, in which fibroblasts are disposed without any organizational tendency [4]. Nodular fasciitis, which is composed of rapidly growing immature cells mimicking sarcomatous fibroblasts with a scattering of inflammatory cells, should also be ruled out [5]. Dermatofibrosarcoma protuberans generally occurs on the trunk and proximal extremities, but has also been described on the face. It has infiltrating margins that can extend into the subcutis [6]. Other monophasic spindle cell tumors, such as leiomyomas and peripheral nerve sheath tumors, should also be considered as part of the differential diagnosis.

The majority of reported cases of dermatofibromas arising on the face showed an infiltration of the subcutaneous and deep soft tissues, with involvement of striated muscle in many cases [7]. The fact that facial striated muscle is more superficially located than skeletal muscles in other parts of the body and the lack of perimuscular fascia in most parts of mimic muscles could be explanations for the tendency of dermatofibromas occurring on the face to infiltrate more deeply located structures.

In contrast with cases of classical dermatofibromas occurring on the lower extremities, in which even marginal or incomplete local excision is not associated with an increased rate of local recurrence, dermatofibromas occurring on the face must be excised with wider margins to prevent repeated recurrence and patient discomfort. Although the best way to cover defects of the face is with local flaps because of the matching skin color and qualities, the authors decided to excise the tumor completely with a wide tumor-free margin and cover with a full-thickness skin graft. The posterior auricular skin color and texture were similar to those of the forehead. At the postoperative 3-month follow-up, the patient was satisfied with the skin color match, and there was no recurrence of the tumor.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

PATIENT CONSENT

The patients provided written informed consent for the publication and the use of their images.

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