

# Plantar Dermatofibroma

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Dermatofibroma is a common benign fibrohistiocytic tumor that occurs anywhere on the body surface, with a propensity for the extremities, usually the lower legs. A 51-year-old female presented with a red-colored nodule, the surface of which was keratotic and measured 0.6 cm in diameter on the sole. A biopsy specimen revealed a poorly defined, nonencapsulated, nodular tumor composed of collagen bundles, fibroblasts, and histiocytes, which were consistent with dermatofibroma. Herein we report a case of dermatofibroma on the sole-plantar dermatofibroma. (*Ann Dermatol* 17(1) 7~8, 2005)

*Key Words:* Dermatofibroma, Sole

## INTRODUCTION

Dermatofibroma is a common benign fibrohistiocytic tumor that occurs in the skin as a firm, indolent single or multiple nodules<sup>1</sup>. It occurs anywhere on the body surface, with a propensity for the extremities, usually the lower legs. To our knowledge, however, there has been no report of dermatofibroma presenting as a solitary nodule on the sole. Herein we report a case of dermatofibroma on the sole-plantar dermatofibroma

## CASE REPORT

A 51-year-old female presented to our hospital for the evaluation of a lesion on the sole that had been slowly increasing in size for about 5 months. She did not complain of pain or pruritus at rest but experienced pain whilst walking. Her past and family histories were not contributory. Examination revealed a red-colored nodule, the surface of which was keratotic and measured 0.6 cm in diameter. The

center of the lesion was elevated and the edge flat and brown (Fig. 1). At palpation the lesion was hard and fixed to the overlying skin but freely movable over underlying tissue. No other cutaneous lesion was observed. A biopsy specimen revealed a poorly defined, nonencapsulated, nodular tumor throughout the depth of the dermis. The epidermis showed hyperkeratosis, acanthosis and elongation of rete ridges, and was separated by a clear zone from the spindle cell tumor in the dermis. The tumor was composed of collagen bundles, fibroblasts, and histiocytes. Individual cells infiltrating between collagen bundles were arranged in a fascicular pattern (Fig. 2), and showed no atypia or pleomorphism. Immunohistochemical staining for CD34 was negative. These pathologic findings were consistent with dermatofibroma.

## DISCUSSION

Clinically our case is unique in that this solitary dermatofibroma developed on the sole, which is an unusual site. Of 379 patients studied by Niemi<sup>2</sup>, there was no single instance of a lesion occurring on the soles, which is an experience shared by many other observers. In addition, a 12-year retrospective study of 67 Korean patients with dermatofibromas, also found no lesion localized to the sole<sup>3</sup>. Reviewing the literature, we were able to find only one case report of a multiple palmoplantar histiocytoma, which presented as two nodules on each palm and one on the left sole<sup>4</sup>.

Received July 24, 2004

Accepted for publication December 7, 2004

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Fig. 1. A bean sized, red-colored hyperkeratotic nodule on the left sole.

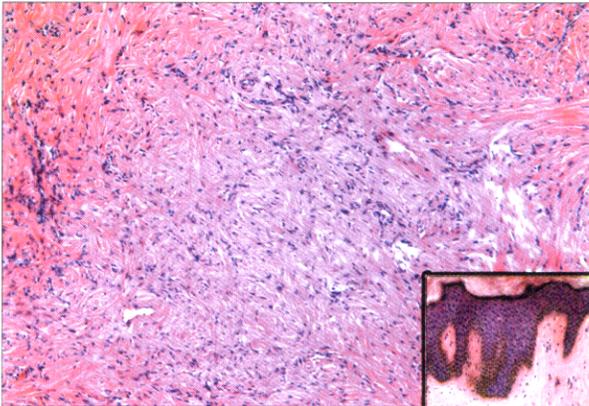


Fig. 2. The biopsy specimen showing a proliferation of fibroblasts and collagen bundles in a storiform arrangement (H&E, original magnification,  $\times 100$ ). Inset shows hyperkeratosis, epidermal hyperplasia with increased hyperpigmentation (H&E, original magnification;  $\times 200$ ).

The clinical differential diagnosis in our case included epidermal cyst, plantar wart, eccrine poroma, glomus tumor and vascular tumor. In such

cases, it is generally agreed that a pathologic study is mandatory for the correct diagnosis of plantar dermatofibroma.

Histologically, this case was also unusual in that there was no hyperpigmentation in the basal layer, which is a characteristic of ordinary dermatofibroma occurring on other sites.

Although the pathogenesis of dermatofibroma has not been fully elucidated, some authors regard this tumor to be caused by an inflammatory proliferation of histiocytes following trauma, rather than being a neoplastic growth<sup>5</sup>. Like a plantar epidermal cyst<sup>6</sup>, plantar dermatofibroma also suggests a physical stimulus as a causative factor, though we were unable to identify a definitive cause in this case.

To our knowledge, there has been no report of dermatofibroma presenting as a solitary nodule on the sole. Herein we report a case of dermatofibroma on the sole-plantar dermatofibroma

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