

Papule on the dorsal foot

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A 26-year-old woman presented with a tender papule on her foot (*Figure*). She first noted the lesion 2 years earlier. The lesion was asymptomatic; however, it was tender with palpation and had grown a little in the past year.



Figure. Dorsal foot with a reddish brown, dome-shaped papule that is 7 mm in diameter.

DIAGNOSIS: Dermatofibroma. Common synonyms are benign fibrous histiocytoma, histiocytoma, and sclerosing hemangioma.

DISCUSSION

Dermatofibromas are benign cutaneous lesions. They are most commonly seen in adults and favor the lower legs. Lesions are typically reddish brown, smooth-surfaced, domed-shaped papules that range in diameter from several millimeters to 2 centimeters. With time, some lesions will flatten. When flat lesions are pinched they may become depressed downward, which is called the “dimple sign”—a clinical clue to the diagnosis. Patients often report an insect bite or ingrown hair preceding the development of the dermatofibroma. Indeed, some authors consider dermatofibromas to represent a reactive inflammatory process while others consider them neoplasms (1).

Multiple eruptive dermatofibromas have been described in immunosuppressed patients. Primary immunosuppression can be caused by a concurrent disease such as systemic lupus erythematosus or mycosis fungoides; secondary immunosuppression may be due to medications such as systemic steroids (2, 3).

Diagnosis and laboratory findings

In most cases, dermatofibromas can be diagnosed clinically. On histologic examination, lesions are characterized by a nodular dermal proliferation of fibroblasts and myofibroblasts. At the periphery of the lesion, thick hyalinized collagen, “keloidal” collagen, is present. The overlying epidermis has elongated rete ridges and a hyperpigmented basal layer. A number of different histologic variants exist for dermatofibromas: clear cell, granular cell, xanthomatous, ossifying, and palisading. Immunohistochemical reactions for vimentin and factor XIIIa are positive, and staining for CD34 is negative.

Lesions with unusual histologic features, such as increased cellularity, or atypical immunohistochemistry results require follow-up. A few case reports describe metastasis of cellular dermatofibromas despite excision of the primary lesion (4–6). Additionally, recurrences have been noted in lesions with am-

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Table. Differential diagnosis of dermatofibroma

Benign lesions	Malignant lesions
Cyst	Basal cell carcinoma
Hypertrophic scar	Dermatofibrosarcoma protuberans
Neurilemmoma (or schwannoma)	Giant cell tumor of the skin
Neurofibroma	Nodular melanoma
Piloleiomyoma	Sclerosing sweat duct carcinoma
Tophus	
Erythema elevatum diutinum	

biguous immunohistochemistry staining patterns, which some authors cite as evidence for the concept of a biologic spectrum between dermatofibroma and dermatofibrosarcoma protuberans (7). Therefore, indeterminate lesions are best treated with complete excision.

Differential diagnosis

The differential diagnosis of a dermatofibroma (*Table*) includes neurilemmoma (or schwannoma) (8), neurofibroma, piloleiomyoma, cyst, hypertrophic scar, and tophus. Additionally, erythema elevatum diutinum, a leukocytoclastic vasculitis of the skin that resolves with fibrosis, can present with lesions that mimic dermatofibromas (9). Similar to dermatofibroma, erythema elevatum diutinum lesions have been noted at sites of insect bites. Histologically, diffuse dermal infiltrates composed of neutrophils and eosinophils accompany the leukocytoclastic vasculitis.

Finally, malignant neoplasms that may mimic dermatofibroma include dermatofibrosarcoma protuberans, giant cell tumor of the skin (a low-grade sarcoma) (10), nodular melanoma, basal cell carcinoma, and sclerosing sweat duct carcinoma (11). Of the malignant lesions that mimic dermatofibroma, dermatofibrosarcoma protuberans has the most clinical and histologic

similarities. However, dermatofibrosarcoma protuberans is typically larger than dermatofibroma, displays continued growth, and oftentimes evolves into multilobulated plaques. Over 50% of dermatofibrosarcoma protuberans lesions occur on the trunk, with special predilection for the shoulder. Routine histology and immunohistochemistry staining can usually distinguish dermatofibroma and dermatofibrosarcoma protuberans. Dermatofibroma generally expresses factor XIIIa, whereas dermatofibrosarcoma protuberans generally expresses CD34.

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