AJNR

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AJNR Am J Neuroradiol 1996, 17 (3) 567-569
http://www.ajnr.org/content/17/3/567

Nodular Fasciitis as a Vascular Neck Mass

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Summary: Nodular fasciitis falls within the benign spectrum of fibrous soft-tissue tumors. We present a case of nodular fasciitis in the supraclavicular fossa in which an unusual angiographic presence of neovascularity is shown.

Index term: Neck, abnormalities and anomalies

Nodular fasciitis is a common, benign, soft-tissue abnormality of fibrous tissue origin. A few reports in the literature have described the cross-sectional imaging characteristics of this entity (1, 2). Previous descriptions of the imaging characteristics of this process suggest that it is avascular (1). We report a case of nodular fasciitis that had the appearance of a vascular supraclavicular mass.

Case Report

A 28-year-old man had a soft-tissue mass in the right supraclavicular region. It was firm, nontender, and mobile. The mass had reportedly been present for approximately 1 month, and was progressively enlarging. A contrast-enhanced computed tomography scan through the level of the thoracic inlet showed a rounded, hyperdense mass adjacent to and poorly distinguished from the scalene musculature (Fig 1A). A coronal T1-weighted magnetic resonance (MR) image showed the rounded mass to be isointense with skeletal muscle (Fig 1B). The mass showed heterogeneous but increased signal on a T2-weighted image (Fig 1C), similar to regional venous structures, which prompted evaluation with Doppler sonography. This study showed low-level vascularity within a solid, echogenic mass (Fig 1D). Angiography confirmed intense vascularity within the lesion supplied by a single-branch vessel from the thyrocervical trunk, which was not embolized (Fig 1E). The mass was completely excised surgically. A pathologic specimen showed a loose array of spindly cells with a tissue culture quality accompanied by a small number of scattered lymphocytes, macrophages, and red blood cells (Fig 1F), consistent with the pathologic diagnosis of nodular fasciitis.

Discussion

Nodular fasciitis is a soft-tissue mass that is a benign tumorlike fibroblastic proliferation (3–5). This entity is also known as subcutaneous pseudosarcomatous fibromatosis, infiltrative fasciitis, or proliferative fasciitis, and histologically it consists of a noncapsulated, relatively well circumscribed mass composed of plump immature fibroblasts. It represents the benign form of a spectrum of lesions of fibroblast origin. Other benign lesions of fibroblastic origin include congenital generalized fibromatosis, fibrous hamartoma of infancy, palmar and plantar fibromatosis, and musculoaponeurotic fibromatosis (6). These benign lesions may be reactive or inflammatory processes, but their pathogenesis is unknown. The intermediate, well-differentiated, low-grade nonmetastasizing fibrosarcoma, also known as aggressive fibromatosis, and the most aggressive poorly differentiated fibrosarcomas represent the malignant end of the spectrum of fibrous lesions (4–6).

Imaging of benign fibrous lesions typically reveals a smoothly marginated soft-tissue mass that may enhance with contrast material. The MR imaging features may help delineate the extent of the lesion, but the signal characteristics generally are nonspecific. In this case, the increased T2 signal was most likely caused by the fluid-filled mucoid spaces. The premise that high T2 signal was due to flow-related enhancement was thought to be less likely, owing to the relative paucity of vascular channels, as shown

Received January 5, 1995; accepted after revision August 1.

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AJNR 17:567–569, Mar 1996 0195-6108/96/1703–0567

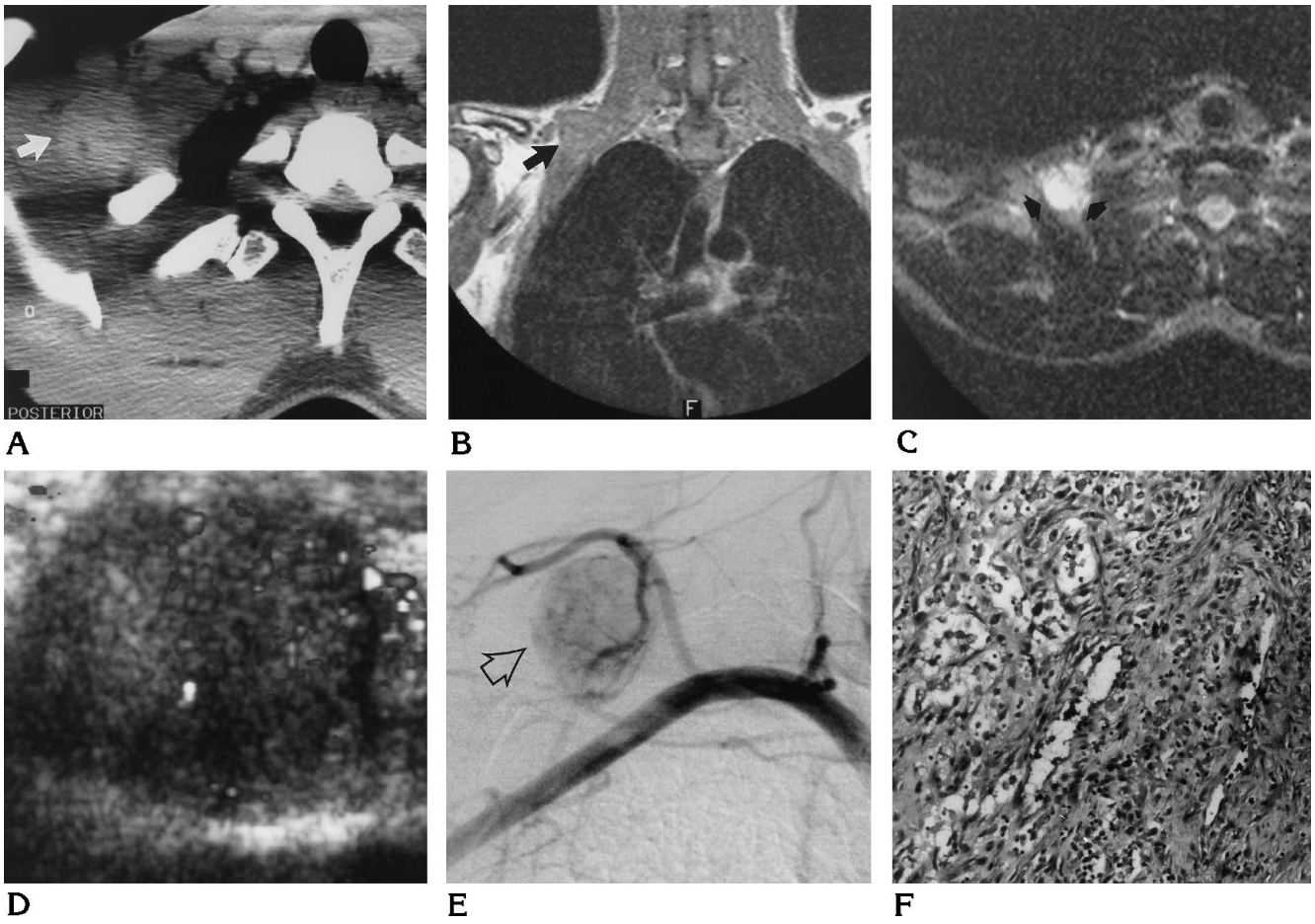

Fig 1. A 28-year-old man with a soft-tissue mass in the right supraclavicular region.

A, Contrast-enhanced computed tomography scan at the level of the thoracic inlet shows a rounded, hyperdense mass (*arrow*) adjacent to the scalene musculature.

B, Coronal T1-weighted MR image (733/20 [repetition time/echo time]) shows a rounded mass (*arrow*) isointense with skeletal muscle.

C, Axial T2-weighted MR image (2550/100) reveals a rounded mass (*arrows*) with hyperintensity similar to regional venous structures.

D, Black-and-white print of a color Doppler sonogram shows low-level vascularity within a solid, hypoechoic mass.

E, Digital subtraction subclavian angiogram reveals neovascularity within a rounded tumor blush (*arrow*).

F, Photomicrograph shows a loose array of spindly cells, mucoid pools, scattered inflammatory cells, and microhemorrhage (hematoxylin-eosin; magnification ×125).

histologically. Tumor margin irregularity may suggest a more aggressive lesion. Clinically, complete surgical cure is frequently obtained in the benign lesions, whereas there is a high postoperative recurrence rate in aggressive fibromatosis. Rarely do these lesions metastasize.

Nodular fasciitis is most commonly found in the subcutaneous tissues, although it may be located intramuscularly or within the fascial soft-tissue planes. Nodular fasciitis is most commonly encountered in the upper extremities and trunk; it is less frequently seen in the head and neck, lower extremities, or other locations (1). As demonstrated in this case, neovascularity encountered in these fibrous lesions is nonspecific and does not necessarily suggest malignancy.

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