

Axillary Fibromatosis

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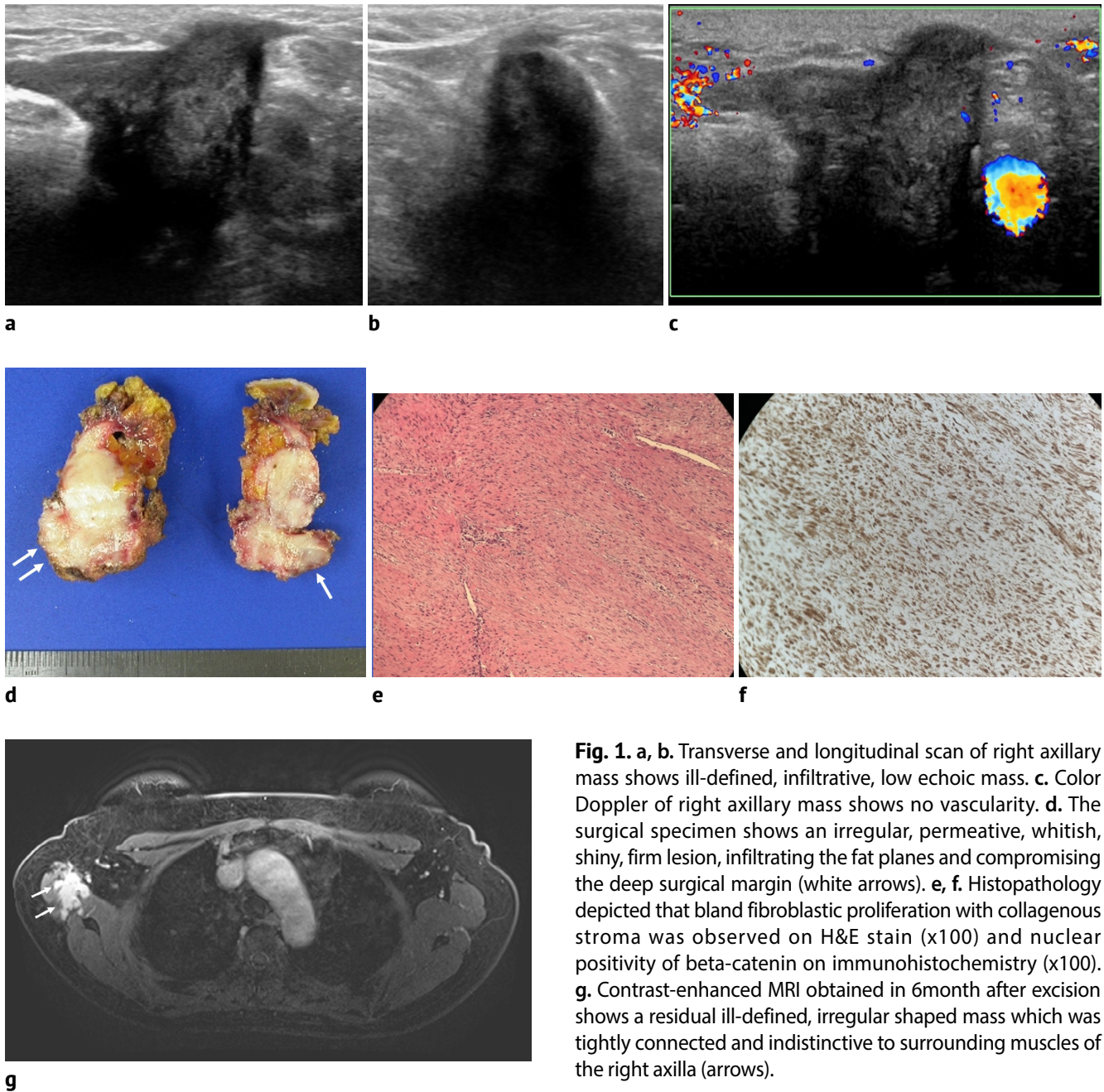


Fig. 1. a, b. Transverse and longitudinal scan of right axillary mass shows ill-defined, infiltrative, low echoic mass. c. Color Doppler of right axillary mass shows no vascularity. d. The surgical specimen shows an irregular, permeative, whitish, shiny, firm lesion, infiltrating the fat planes and compromising the deep surgical margin (white arrows). e, f. Histopathology depicted that bland fibroblastic proliferation with collagenous stroma was observed on H&E stain (x100) and nuclear positivity of beta-catenin on immunohistochemistry (x100). g. Contrast-enhanced MRI obtained in 6month after excision shows a residual ill-defined, irregular shaped mass which was tightly connected and indistinctive to surrounding muscles of the right axilla (arrows).

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A 50-year old woman was referred to our hospital for a hard, palpable mass in her right armpit. She had a history of excision of both axillae due to accessory breast tissues 5 years ago.

On physical examination, she had a hard, palpable, painless mass adhered to her right axilla. A mammogram showed no abnormal finding within the ipsilateral breast. The area of concern in her right axilla was not included. Ultrasound (US) of the right axilla showed a mass with irregular shape, indistinct margin, and measuring about 4.5x3.1 cm (Fig. 1a, 1b). No vascularity was found on color Doppler scan (Fig. 1c). The patient underwent US-guided core biopsy, which revealed fibromatosis. Due to its growth and local invasion potential, surgical excision was performed. The macroscopic evaluation showed an irregular, permeative, whitish, shiny, firm lesion (arrows) infiltrating the fat planes and compromising the deep surgical margin (Fig. 1d). Histopathology depicted bland fibroblastic proliferation with collagenous stroma observed on H&E stain (Fig. 1e) and nuclear positivity of beta-catenin on immunohistochemistry (Fig. 1f). Six months after surgery, the degree of palpability has decreased. Contrast-enhanced MRI showed a residual ill-defined, irregular shaped mass (arrows) tightly connected and indistinctive to surrounding muscles of the right axilla (Fig. 1g).

Fibromatosis, also known as desmoid tumor, is considered a true neoplasm composed of well-differentiated fibroblasts embedded in an abundant collagenous matrix with increased cellularity at the periphery. It typically arises from connective tissue in muscle, fascia, or aponeurosis, or at the site of a traumatic or postsurgical scar. The most common sites include the abdominal wall and cavity, chest wall, scapular area, and the limbs, rarely affecting the axilla (1-3).

Generally, fibromatosis often affects adolescents and young adults [4]. Fibromatosis is poorly circumscribed, nonencapsulated, and infiltrative, and grows insidiously. Although locally aggressive, it is

not malignant and does not metastasize. Although classified as a benign tumor, axillary fibromatosis is locally aggressive and has high rates of recurrence, destroying the surrounding tissues. Wide excision is known to be the most effective method. However, due to typically large size and unclear margin, treatment with wide excision can be challenging [3]. Especially when surgical margins are compromised, fibromatosis is associated with high levels of recurrence. Differential diagnosis includes nodular fasciitis, fibroma of the tendon sheath, tumor of the neural sheath, fibroadenoma, dermatofibroma, and leiomyoma.

Imaging has a major impact on therapeutic and surgical planning. US is a non-expensive and highly accessible initial method. US findings include a regular or irregular heterogeneous solid mass, circumscribed or with poorly defined margins. Echogenicity is variable and closely related to histological heterogeneity. Color Doppler vascularization is also variable, with absence being more common. On computed tomography (CT), fibromatosis appears as a soft tissue density mass with different degrees of attenuation according to histological composition, with well-defined or ill-defined margins. A higher proportion of collagen increases tomographic density. This characteristic is particularly useful during clinical follow-up, as an increase in density reflects a good response to treatment. Necrosis and calcification are not common. MRI is currently the imaging modality of choice in the evaluation of soft tissue injuries of the extremities and trunk. MRI findings include heterogeneous iso- to hyperintense masses on T1- and T2-weighted sequences, which probably reflects varying amounts and distributions of spindle-shaped cells, extracellular collagen, and myxoid matrix. The signal intensity is highly variable, reflecting the proportion of cellular and fibrotic components of the tumor. Hypointense areas on T2-weighted images represent high cellularity and dense collagen, while hyperintense areas represent low cellularity

(5). These collagen bundles do not enhance after contrast material administration. However, tumors typically show moderate to marked heterogeneous enhancement.

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