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Case Report

Soft tissue myxoma manifesting as a slowly growing subcutaneous mass in the anterior chest wall: A case report [☆]

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ABSTRACT

Soft tissue myxomas are benign mesenchymal neoplasms typically found in the intramuscular components of the proximal extremities. However, soft tissue myxomas in the chest wall are rare. We report the case of a 41-year-old woman with soft tissue myxoma who presented with a slowly growing, palpable lump on her left anterior chest wall that has been present for several years. Mammography revealed an oval, circumscribed, and hyperdense mass in the retromammary fat layer of the upper inner quadrant of the left breast. Ultrasonography revealed an oval, circumscribed, and hypoechoic mass with internal echoes and multiple microcystic spaces. A triangular hyperechoic area adjacent to the pole of the mass and peripheral hyperechoic rim were also detected. The patient underwent surgical excision and was diagnosed with soft tissue myxoma with subcutaneous manifestation.

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Introduction

Myxoma is a benign mesenchymal neoplasm composed of stellate cells with thin collagen fibers in an abundant extracellular myxoid matrix [1]. Most myxomas are solitary and involve the heart, subcutaneous tissue, aponeurotic tissue, bones, genitourinary system, and skin [2]. The most common type of noncardiac soft tissue myxoma is intramuscular myxoma (82%), which can be located in the thigh, upper arm, calf, or buttock or the trunk (uncommon site). Cases of intermuscular or subcutaneous myxomas are rare (<15%) [3]. Herein, we

report the mammographic and sonographic findings of a slowly growing subcutaneous myxoma in the anterior chest wall.

Case report

A 41-year-old woman presented to our hospital from the local clinic with a palpable lump in her left anterior chest wall. The lump was observed 3 years earlier and slowly increased in size. Physical examination revealed a soft, movable, non-tender mass without skin lesions in the peripheral portion

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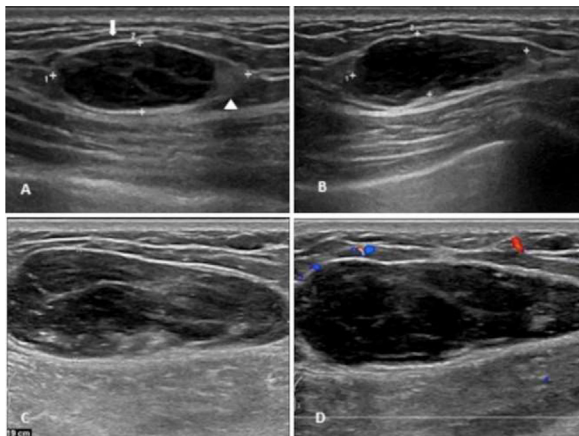


Fig. 1 – (A, B) Initial ultrasonography of the local clinic shows a 3-cm oval-shaped, circumscribed, hypoechoic mass with some internal echoes, multiple microcystic spaces, and posterior acoustic enhancement on the left anterior chest wall. The mass has a triangular hyperechoic area at the pole of the mass (arrowhead) and peripheral hyperechoic rim (white arrow). (C) At the four-and-a-half-year follow-up, ultrasonography shows that the mass has increased in size from 3-cm to 5.5-cm. The mass is located at the subcutaneous fat layer of the left anterior chest wall and is not attached to the overlying skin. (D) Color Doppler examination reveals no vascularity in the mass with surrounding vessels.

of the upper inner quadrant of the left breast. Initial ultrasonography at the local clinic revealed a 3-cm oval, circumscribed, hypoechoic mass with internal echoes and multiple microcystic spaces. The mass had a triangular hyperechoic area at its pole, a peripheral hyperechoic rim, and posterior enhancement (Figs. 1A and B), consistent with a benign chest wall mass. However, the mass increased in size from 3 to 3.9 cm 3 years later. Therefore, the patient was transferred to our hospital. Based on the clinical history, an excisional biopsy was recommended to exclude malignancy. The patient refused surgery, wherein regular follow-up was performed. At the 18-month follow-up, the mass size had increased from 3.9-cm to 5.5-cm. The sonographic findings of the mass showed no changes, except for the increased size, compared with the previous features. The mass was located at the subcutaneous fat layer of the left anterior chest wall, close to the peripheral portion of the breast parenchyma, and unattached to the overlying skin (Fig. 1C). There was no vascularity in the mass with the surrounding vessels on color Doppler ultrasonography (Fig. 1D). No axillary lymphadenopathy was observed. For evaluating the correlation between the mass and breast, a mammography was performed. The mammography revealed a large oval-shaped, and circumscribed hyperdense mass without calcification in the retromammary fat layer of the upper inner quadrant of the left breast (Fig. 2). The patient underwent surgical excision of the mass. The gross specimen showed a well-demarcated mass with a gray whitish cut surface that was markedly myxoid without hemorrhage or necrosis (Fig. 3A). The epicenter of the mass appeared to be a sub-

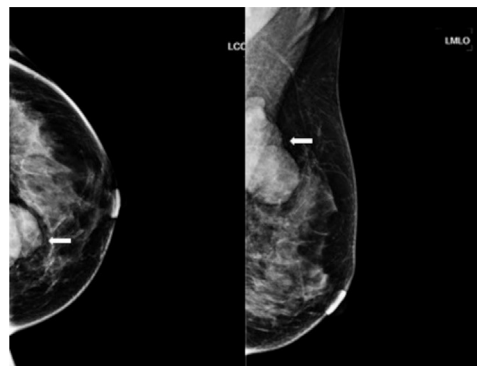


Fig. 2 – Mammography shows a large oval, circumscribed hyperdense mass with gentle lobulation in the retromammary fat layer of the upper inner quadrant of the left breast. There is no calcification in the mass.

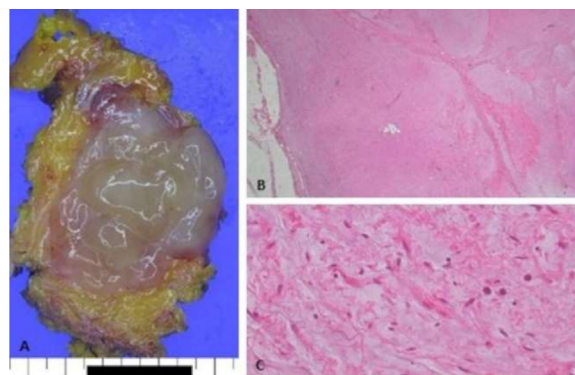


Fig. 3 – (A) Gross specimen shows a 5.5-cm relatively encapsulated mass, wherein the cut surface is gray - whitish, gelatinously myxoid without hemorrhage and necrosis. (B) The result of immunohistochemical staining with hematoxylin and eosin (H&E, original magnification, x40) shows multilobulated paucicellular nodules, intersected by thin fibrous septa. (C) Microscopic findings (H&E, x200) show that the composed cells are bipolar wavy spindle-shaped in myxoid stroma.

cutaneous fat layer, partly adjacent to the breast parenchyma. Histopathological examination revealed soft tissue myxoma (Figs. 3B and C).

Discussion

The most common type of noncardiac soft tissue myxoma is intramuscular myxoma (>82%), typically found in the large muscles of the proximal extremities. Less commonly, these lesions are found in the trunk. Intermuscular and subcutaneous myxomas are rare (<15%) [3]. The common clinical manifestation of myxoma is a slow-growing painful or painless palpable mass that usually occurs in middle-aged women rather than in men [3,4]. This is consistent with our case. Since myxoma

has high mucin and low cellular content, its radiologic findings reveal a hypoechoic to near-anechoic mass on sonography, low attenuation mass on computed tomography (CT), and high signal intensity (SI) mass on T2-weighted magnetic resonance imaging (MRI), similar to the features of cysts, including synovial cyst, bursa, and ganglion [4–15]. The location of myxoma is important for differential diagnosis. If myxoma is located at the anterior chest wall, similar to our case, a differential diagnosis including breast masses should be considered.

There are a few reports on the imaging findings of intramuscular myxoma in the chest wall [9–15]. To date, there are no reports of the radiologic features of subcutaneous myxomas. Kim reported that an intramuscular myxoma in the pectoralis muscle appeared as a circumscribed, oval, and hyperdense mass on mammography [9], similar to the findings in this report.

The sonographic findings of intramuscular myxomas in the chest wall have been described more infrequently compared with CT and MRI findings. Kim reported that an intramuscular myxoma demonstrated an oval-shaped, circumscribed hypoechoic to near-anechoic mass with some internal echoes, with posterior acoustic enhancement, and without calcification on sonography. A triangular hyperechoic area adjacent to at least one pole of the mass and a peripheral hyperechoic rim were also seen. The mass showed avascularity or hypovascularity with the surrounding vessels on color Doppler ultrasonography [9]. These sonographic findings agree with those in our case and previous reports [4,7,8] of intramuscular myxomas in the large muscles of the proximal extremities. Jung reported that an intramuscular myxoma in the right chest wall appeared as a hypoechoic mass with an oval shape, indistinct margin, and indefinite vascularity on color Doppler ultrasonography [10].

MRI is the modality of choice for evaluating myxomas, particularly the intramuscular type. In previous reports [4–8], the intramuscular myxomas have been described that an oval shape, circumscribed margin, hypointensity on T1-weighted images (T1WI), an extremely hyperintense mass on T2-weighted images (T2WI), and mild-to-moderate heterogeneous enhancement on contrast-enhanced images. A high SI focus at the superior and inferior margins of the mass on T1WI may be observed, representing fatty atrophy of the adjacent muscle. In addition, a perilesional high SI of the mass on T1WI or T2WI can be observed, corresponding to muscle atrophy with fatty infiltration or edema based on established pathological features. These findings correspond to the peripheral hyperechoic rim and triangular hyperechoic area adjacent to the poles of the mass on ultrasonography.

Histopathological examination of myxomas shows stellate cells with thin collagen fibers in an abundant extracellular myxoid matrix, usually hypocellular and hypovascular lesions. Immunohistochemical markers cannot be used to confirm the morphological diagnosis of myxomas. Surgical excision is the treatment of choice; local recurrence is rare.

Although anterior chest wall lesions, including soft tissue myxomas, rarely occur, they may be detected on breast sonography; these radiologic findings are nonspecific. Appropriate sites, such as the intramuscular location of the proximal extremities, can be helpful for diagnosis. However, unusual locations, such as the chest wall, can cause diagnostic difficulties.

Awareness of the possibility that soft tissue myxomas may uncommonly occur in the chest wall, particularly as a subcutaneous manifestation, is helpful for differential diagnosis and treatment.

Conclusions

Subcutaneous myxomas in the anterior chest wall are extremely rare and its radiologic features are nonspecific. The mammographic and sonographic findings can be helpful for differential diagnosis from other chest wall lesions and breast masses. A slowly growing subcutaneous chest wall mass with an oval-shaped, circumscribed hypoechoic to near-anechoic mass with some internal echoes, multiple microcystic areas, and a triangular hyperechoic area adjacent to the pole of the mass, peripheral hyperechoic rim on ultrasonography, and avascularity on color Doppler ultrasonography may be useful for considering the possible occurrence of subcutaneous myxomas.

Patient consent

Consent for publication has been obtained from the patient.

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