



Hemangioma of the Chest Wall Mimicking Gynecomastia

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Hemangiomas are common benign soft-tissue tumors that rarely originate in both the pectoris muscle and breast. In the first place, this study presents a 24-year-old man with such a tumor causing diagnostic dilemma both clinically and radiologically. In retrospect, we discovered some characteristic radiologic findings which could lead to a preoperative diagnosis. A variety of entities may simulate breast tumors in the male chest wall. We discuss differential diagnoses that simulate gynecomastia and characteristic imaging findings of hemangiomas.

Key Words: breast, chest wall tumor, gynecomastia, hemangioma, pectoralis muscle

INTRODUCTION

Prominent breasts in males are usually simply regarded as gynecomastia until proven otherwise. However, a wide variety of diseases simulating breast tumors may affect the chest wall, including congenital and developmental anomalies, inflammatory and infectious diseases, and soft-tissue and bone tumors. In addition to physical and serological examinations, imaging evaluation plays a crucial role for differential diagnosis. Among these, hemangiomas may manifest characteristic radiologic appearances which lead to accurate preoperative diagnosis. Hemangiomas are benign vascular tumors which are rarely found in the muscles, making up only 0.8% of cases.¹ To our knowledge, this is the first report of hemangioma within both the pectoralis muscle and breast that is visible on mammograms with characteristic calcifications.

CASE REPORT

A 24-year-old male had a prominent left breast for

years. The breast was stable in size and not associated with skin ecchymosis. However, mild tenderness developed recently especially after intense physical activities. There was no history of trauma or relevant medical problems. He had no regular medication or drug abuse. The family history was also negative for breast cancer. Physical examination revealed a soft bulging mass, about 12 cm in size, in the left chest wall without bruit or thrill. The left shoulder showed no limitation of range of motion or stretching-related pain. There was no axillary or supraclavicular lymphadenopathy.

Under the impression of gynecomastia, he was admitted for detailed evaluation and surgical treatment. A series of laboratory examinations, including follicle-stimulating hormone, luteinizing hormone, and prolactin, were normal. On his mammograms, the left breast was extremely dense and nodular with multiple dense round laminated calcifications and fatty streaks (Fig. 1). These calcifications, ranging from 2 mm to 4mm in size, had well-defined margins and shared a common characteristic appearance of linear lucency inside. The right chest wall appeared to be normal without significant breast tissue.

For thorough evaluation and characterization of the left breast, ultrasonography (Fig. 2) and computed tomography (CT, Fig. 3a) were performed and showed a large heterogeneous tumor in both the breast and pectoralis muscle. The lesions in both regions shared similar imaging characteristics with multiple calcifications and fatty strands. The overlying ribs, lungs, and the mediastinum were all normal. Under the impression of a hemangioma in left chest wall, an incisional biopsy was per-

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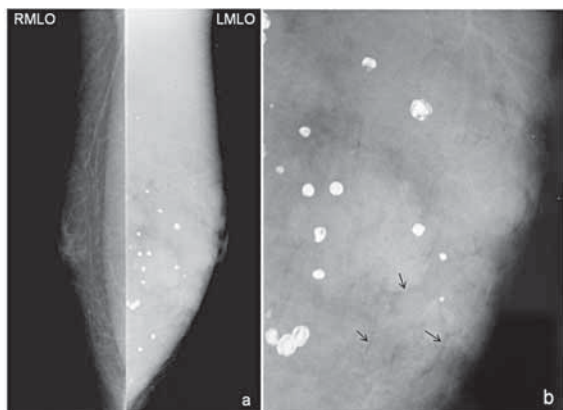


Fig 1. Mediolateral oblique view (a) of both breasts showed extremely dense and nodular appearance of the left breast with multiple round laminated calcifications and fatty streaks (arrows in close-up view (b)).

formed. The tumor was found to bleed very easily. Microscopically, multiple dilated vascular channels lined by endothelium in the tumor confirmed the diagnosis (Fig. 3b). As the patient refused surgical excision, he was followed by our outpatient department for years with stable condition.

DISCUSSION

Although hemangiomas are common benign soft-tissue tumors that can be present in various parts of the body, they are quite uncommon in the skeletal muscles, especially in the chest wall. The occurrence of such tumors in both the pectoris muscle and breast is even rarer. Review of previous studies shows that this is the first description of such a hemangioma visible on mammograms.

According to the findings of our patient's mammograms, the large mass was initially regarded as a breast tumor until cross sectional imaging studies were performed. Two differential diagnoses, gynecomastia and breast cancer, were first rendered. The most common etiology of breast masses in males is gynecomastia, which usually occurs bilaterally with unilateral presentation. The clinical presentation of gynecomastia is a soft, mobile, and tender mass in the retroareolar region. Mammography usually shows a fan-shaped fibroglandular tissue radiating from the nipple.² Our patient is unlikely to have gynecomastia evidenced not only by clinical presentation but also the mammographic appearance, which is very extensive and dense. In addition, no gynecomastia

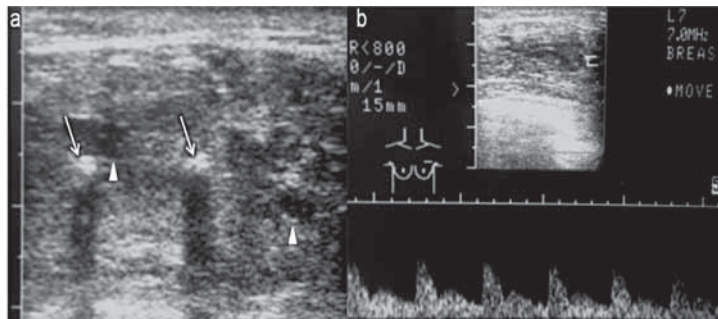


Fig 2. Gray-scale ultrasonography (a) depicted a heterogeneous hypoechoic mass with calcifications (arrows) and cystic areas (arrowheads), where arterial flow appeared on spectral analysis (b).

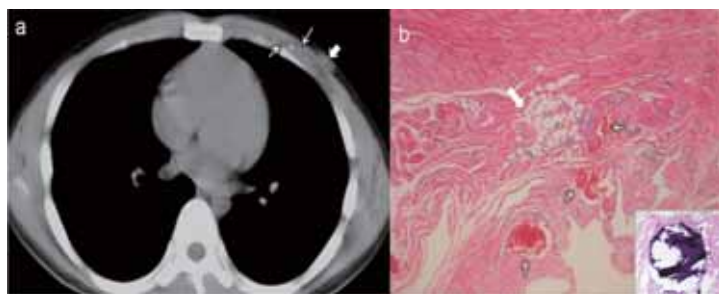


Fig 3. (a) Axial non-enhanced CT demonstrated a heterogeneous mass with multiple calcifications and fatty streaks (arrows) in the left pectoralis muscle. Also noted was a soft-tissue nodule (thick arrow) in the left breast with tiny calcifications. (b) Pathologic examination (H&E, 100 ×) showed calcifications (inset), fat components (thick arrow), and multiple dilated vascular channels (arrows) lined with endothelium, findings consistent with hemangioma.

in the opposite breast could be identified. The calcifications are also not characteristic of gynecomastia.

Breast cancer should be ruled out for any mass in a male breast, although it is a lot more uncommon than gynecomastia. It accounts for only 0.17% of all cancer cases in men and most of the cases are invasive ductal cancer.^{3,4} Clinical presentations are usually hard, fixed, painless masses eccentric to the nipple with occasional nipple discharge or ulceration. On mammograms, the margins of the lesions can be well defined, ill defined, or spiculated with infrequent findings of calcifications, reported in 13-30% of cases.^{2,5} Our patient's young age, stability of the mass, absence of family history, and the unusual type of calcification make the possibility of cancer low.

Other entities associated with calcifications on mammograms include skin calcifications, fat necrosis, secretory calcifications, tuberculosis, parasitic infections, and rarely encountered phleboliths. Among these, characteristic smooth, round, and laminated calcification of phleboliths usually can be differentiated from the others; and they are pathognomic for benign vascular lesions.⁶ Although the mammographic findings of this tumor are nonspecific, the presence of round calcifications most likely reflects phleboliths in the hemangioma. Moreover, sonograms can finely differentiate hemangioma from vascular malformation by the presence of soft-tissue components, which are absent in the latter.

Most intramuscular hemangiomas are discovered in childhood or adolescence, and over 85% of cases are noticed in the first three decades of life. Patients with intramuscular hemangiomas frequently exhibit a mass and associated pain. Increased number of normal or abnormal appearing vessels embedded in fibrofatty tissue is a characteristic microscopic finding.⁷ For such lesions in the chest wall, CT is suitable for demonstrating not only the calcifications and fatty components but also the detailed anatomical relationship to ribs, pleura, and lungs. Intramuscular hemangiomas are not likely to involute. Wide excision is the treatment of choice for symptomatic patients.¹

In conclusion, our case reminds us of the fact that not all lesions on mammograms originate in the breast. A variety of entities may simulate breast tumors in the male chest wall. Among these, preoperative diagnosis of hemangiomas may be made with the presence of characteristic imaging findings.

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