

An Unusual Case of an Intramuscular Lipoma of the Pectoralis Major Muscle Simulating a Malignant Breast Mass

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Abstract

Introduction: Intramuscular lipomas of the pectoralis major muscle are rare and may mimic malignant breast tumours. **Clinical Picture:** A 58-year-old Chinese woman presented with a 2-year history of an enlarging left breast mass. Clinical examination revealed a palpable hard mass in the left breast. **Treatment:** Standard mammographic views revealed a radiolucent mass deep in the left pectoralis major muscle. The mass was homogeneously hypoechoic with smooth margins on ultrasound. **Outcome:** Surgical excision of the mass was performed. **Histological diagnosis** was an intramuscular lipoma of the left pectoralis major muscle. **Conclusions:** Recognition of the radiolucent density and submammary location of a pectoralis major muscle lipoma is important as it allows the correct diagnosis to be made.

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Introduction

Intramuscular lipomas of the pectoralis major muscle are rare tumours.¹ We describe an unusual case of a lipoma of the pectoralis major muscle which presented as a hard and progressively enlarging breast mass.

Case Report

A 58-year-old Chinese lady presented in December 2000 with a 3-month history of progressive enlargement of her left breast. She was otherwise well, and did not have other symptoms such as nipple discharge or skin changes. There was no family history of breast cancer. Clinical examination revealed non-specific hardening of the left breast. No enlarged axillary lymph nodes were palpable. Standard mediolateral oblique (MLO) and craniocaudal (CC) mammographic views were obtained and reported as normal. She was discharged with an appointment for routine review at the surgical clinic. Two years later, she presented with an enlarging left breast mass that was now palpable. Clinical examination confirmed a palpable hard mass in the left breast, fixed to the chest wall in the upper outer quadrant. Retrospective review of her previous mammogram performed in December 2000 suggested the presence of a

3.0 x 0.5-cm radiolucent mass deep in the left pectoralis major muscle, seen only in the MLO view. Mammography was repeated, demonstrating an 8.5 x 2.7-cm encapsulated radiolucent mass of fat density in the left pectoralis major muscle with displacement of the anterior muscle margin (Fig. 1). No associated calcifications were seen. The overlying breast parenchyma was slightly compressed. On ultrasound, the mass was homogeneously echogenic with smooth margins (Fig. 2). No intralesional vascularity was demonstrated. No enlarged axillary lymph nodes were detected mammographically or sonographically. The patient underwent complete surgical excision under anaesthesia. The intraoperative findings were that of a 9.7 x 7.0 x 2.5-cm lobulated yellowish mass. Histological analysis revealed mature adipocytes without evidence of malignancy or lipoblasts, consistent with the diagnosis of a lipoma (Fig. 3).

Discussion

Lipomas are benign mesenchymal tumours composed of adipocytes. They are one of the most common soft tissue tumours and can be found in the breast, thorax and extremities. They are typically encountered in patients

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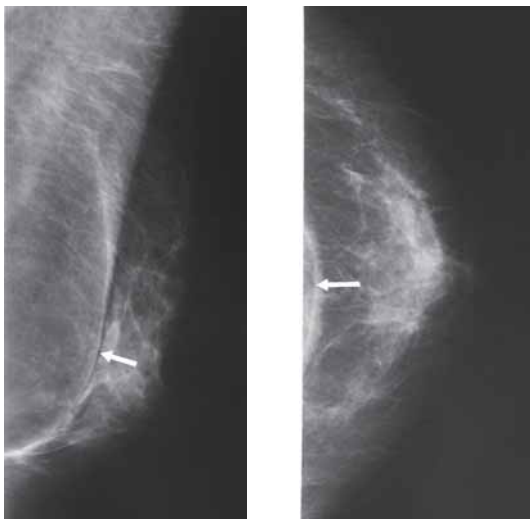


Fig. 1a.

Fig. 1b.

Fig. 1. 58-year-old Chinese woman with an enlarging left breast mass. Mediolateral oblique (MLO) and craniocaudal (CC) views of the left breast.

(a) There is a radiolucent mass deep in the left pectoralis muscle which displaces the muscle margin anteriorly in the MLO view (white arrow).

(b) The mass is not as well visualised on the CC view due to its deep submammary location (white arrow).

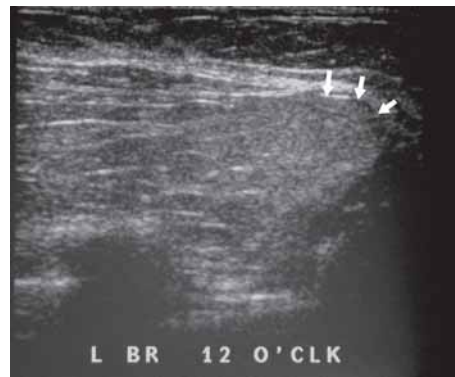


Fig. 2. Ultrasound of the left breast demonstrates a homogeneously echogenic mass in the 12 o'clock position with encapsulated margins (white arrows).

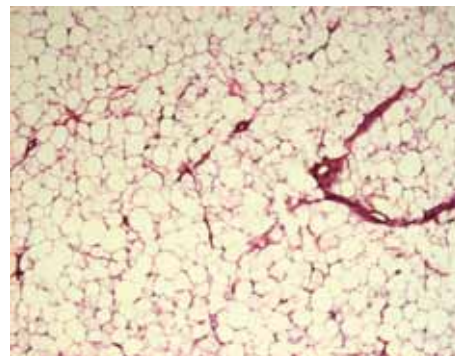


Fig. 3. Microscopically, the tumour showed sheets of mature adipocytes without lipoblasts (H&E x40).

between 50 and 70 years of age and are more common in the obese.² When they occur in the chest wall, they are usually deep lesions and may have both intrathoracic and extrathoracic components.³ Intramuscular lipomas involving the pectoralis major muscle are uncommon and when they do occur, they may mimic breast malignancies clinically and rarely mammographically.⁴

Like breast lipomas, intramuscular lipomas of the pectoralis muscles are well-encapsulated radiolucent tumours of fat density. Recognition of a displaced anterior margin of the pectoralis muscles allows the correct submammary localisation of the mass. Occasionally, if the mass is very large, it may be difficult to appreciate the displaced pectoralis muscle on mammogram.⁴ When the masses are small, they may be missed on mammography, as was the case in our patient. On ultrasound, lipomas of the pectoralis major muscle are well defined and homogeneously echogenic.¹ Cross-sectional imaging modalities such as computed tomography (CT) and magnetic resonance imaging (MRI) can accurately identify the intramuscular location of these lipomas. Like lipomas elsewhere in the body, they are homogeneously hypodense on CT, with Hounsfield values typically in the negative range. On MRI, they are hyperintense on T1- and T2-weighted images and hypointense on fat-suppressed T1-weighted sequences. The advantage of CT and MRI is their ability to demonstrate septations, solid components and

enhancement which may raise the suspicion of liposarcoma.⁵ In our patient, MRI was not performed because the ultrasound features were typical for a benign lipoma and it was felt an MRI would not have added further diagnostic and surgical relevant information.

The treatment of intramuscular lipomas of the pectoralis muscle is complete surgical excision, especially for lesions that are large because of the risk of liposarcoma. Incomplete excision may result in recurrence.¹

In conclusion, intramuscular lipomas of the pectoralis major muscle are uncommon tumours that may mimic breast malignancies clinically and mammographically. Recognition of its radiolucent density and submammary location is important as it allows the correct diagnosis to be made.

REFERENCES

1. Gopal U, Patel MH, Wadhwa MK. Intramuscular lipoma of the pectoralis major muscle. *J Postgrad Med* 2002;48:330-1.
2. Tateishi U, Gladish GW, Kusumoto M, Hasegawa T, Yokoyama R, Tsuchiya R, et al. Chest wall tumors: radiologic findings and pathologic correlation: part 1. Benign tumors. *Radiographics* 2003;23:1477-90.
3. Jeung MY, Gangi A, Gasser B, Vasilescu C, Massard G, Wihlm JM, et al. Imaging of chest wall disorders. *Radiographics* 1999;19:617-37.
4. Britton CA. Subpectoral mass mimicking a malignant breast mass on mammography. *Am J Roentgenol* 1992;159:221.
5. Kransdorf MJ, Bancroft LW, Peterson JJ, Murphey MD, Foster WC, Temple HT. Imaging of fatty tumors: distinction of lipoma and well-differentiated liposarcoma. *Radiology* 2002;224:99-104.