CASE REPORT

Wandering Humeral Head Mimicking a Breast Mass

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SUMMARY

A 74-year-old woman was incidentally found to have a left breast mass. The mass could not be adequately compressed to be visualized on mammography. Ultrasonography showed a heavily-calcified rounded mass in the left axillary tail of the left breast. Chest radiograph confirmed that the mass was a migrated humeral head. Remotely-displaced fracture-dislocations of the humeral head are very rare and to our knowledge, displacement into the breast, clinically mimicking a breast mass, has not been previously described.

KEY WORDS:
Humeral head fracture-dislocation, Humeral head migration, Breast pseudoleum

INTRODUCTION

While fracture-dislocations of the proximal humerus are fairly common, remote displacement of the head is very rare. Only 15 cases have been described in the literature, of which the majority were found within the thoracic cavity[1]. To our knowledge, humeral head displacement into the breast or along the anterior chest wall has not been previously reported.

CASE REPORT

A 74-year-old woman with schizophrenia, dementia and left hemiplegic stroke was admitted to a nursing home. She also had a past history of tuberculous meningitis. On admission, she was found to have a lump located at the upper left breast. This mass was asymptomatic. Due to her poor mental function, she was unable to provide any information regarding its onset, duration, or any size change. Her son, the primary caregiver, was unaware of any history of major trauma to his mother.

On examination, a hard mass was felt in the axillary tail of the left breast. No other mass was palpable in this region. As the clinical diagnosis was a breast mass to be investigated, the surgeon performed fine-needle aspiration cytology which was non-diagnostic due to low cell yield. Mammogram failed to reveal any lesion within the breast, largely due to inability to compress the mass during mammographic examination (Fig. 1). In view of the presenting complaint, ultrasonography was performed which showed a 3.6cm mass in the left breast at the 2 o'clock position, deep to the breast tissue. The mass was rounded with posterior acoustic shadowing, indicative of a heavily-calcified mass (Fig. 2). At this point in time, suspicion of a dislocated humeral head was raised.

The chest radiograph confirmed an old fracture-dislocation through the surgical neck of the left humerus. The displaced humeral head was seen as a well- corticated sclerotic mass located along the lateral left rib cage, adjacent to the left upper breast shadow (Fig. 3). In view of the patient's poor pre-morbid status and left hemiplegia, the patient was managed conservatively. There was no change in clinical status at follow-up eight months later and patient was discharged from further review.

DISCUSSION

Fracture-dislocations of the shoulder are fairly common, but in the vast majority of cases, following the traumatic episode, the humeral head remains in close proximity to the glenoid cavity and upper shaft of the humerus. Only a small number of cases of remote humeral head displacement have been described in the literature. These include 13 cases where the humeral head was found in the thoracic cavity, one case where it was found in the thoracic outlet, and one case where there was displacement into the retroperitoneal region posterior to the left kidney[1, 2]. Trauma, usually a fall or motor vehicle accident, was the common aetiological factor in all these cases. Associated injuries such as subcutaneous emphysema, upper rib fractures, glenoid fractures, and haemopneumothorax were common[1]. The humeral head fragment appeared to have traversed the rib cage in all the cases, except for the one located in the thoracic outlet.

In contrast to the previously-described cases, there was no history of trauma in our case, nor was there evidence of an old rib or glenoid fracture. We postulate that the patient must have fallen and sustained a humeral neck fracture that had gone unrecognized for years. Due to her left hemiplegia, she probably did not feel pain and in any case, was unable to move her limb. With her mental state, she was probably unable to comprehend her injury or tell to her caregivers that she had fallen. Over time and with passive patient movement, the undiagnosed fractured humeral head had probably dislocated and ruptured through the left shoulder joint, and tracked between the muscular and subcutaneous planes to its present position adjacent to the left breast.

Densely-calcified breast masses, such as that demonstrated on ultrasonography of this patient's breast, are unusual. Differentials include fibroadenoma and occasionally, dystrophic calcifications. Nonetheless, these are rarely so uniformly rounded or calcified as in this case. Osteoid containing lesions of the breast are even rarer. Primary osteosarcoma of the breast is an uncommon malignancy,

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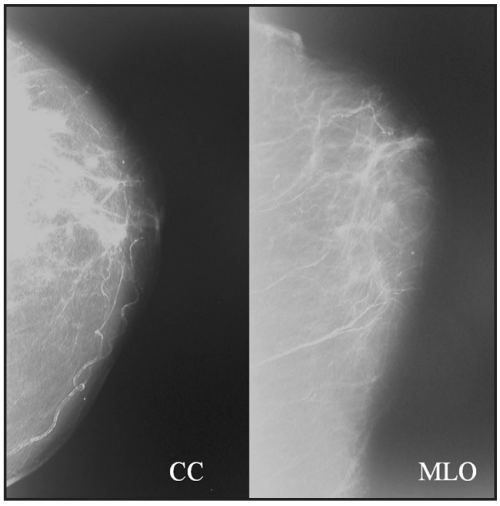

Fig. 1: Mammogram of the left breast (CC and MLO projections) does not show the palpable mass.

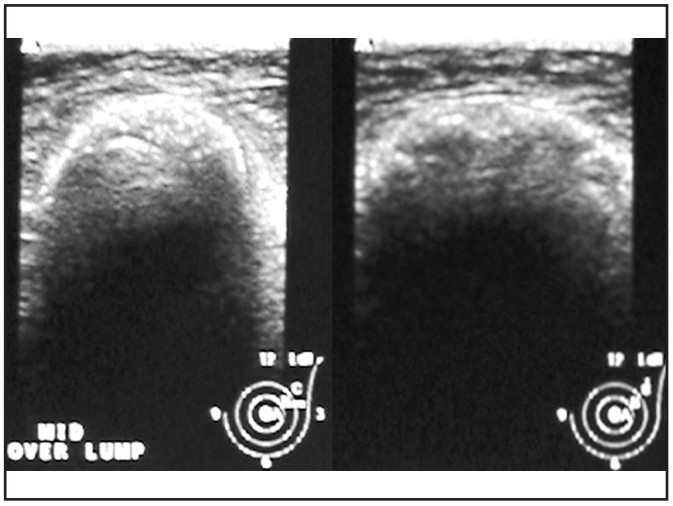

Fig. 2: Transverse and oblique ultrasonographic images show a well-circumscribed, rounded lesion with prominent posterior acoustic shadowing. It is located in the axillary tail of the left breast.

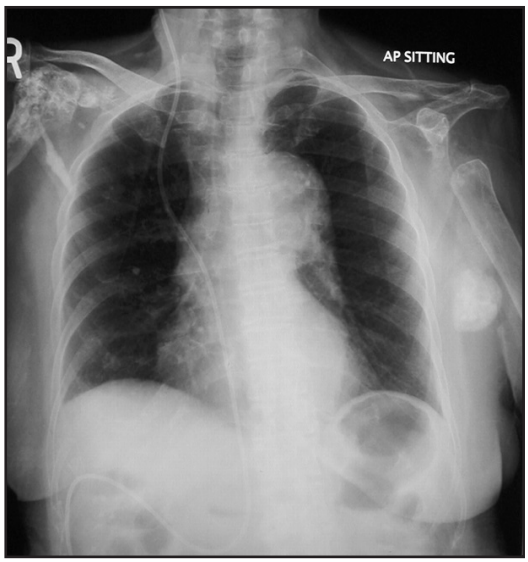

Fig. 3: Frontal chest radiograph shows the dislocated and sclerotic left humeral head located at the lateral aspect of the left rib cage in the region of the left upper breast. The ventriculoperiteonal shunt was previously placed for tuberculous meningitis.

usually presenting as a large mass with well-defined margins, often containing punctuate calcifications [3]. Osteoid tissue also been reported in lesions such as fibroadenoma, phyllodes tumour and metaplastic carcinoma [4].

In our case, the diagnosis was suspected on ultrasonography, despite the absence of clinical suspicion or predisposing factors, and confirmed on the chest radiograph. This demonstrates the importance of considering a broad list of differentials, including those unrelated to the presenting organ system. The usefulness of obtaining a radiograph, and the need to review the extra-thoracic areas routinely, is highlighted in this patient in whom an initial clinical diagnosis of a breast mass was made.

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