Breast granular cell tumour, a clinical case
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Section: Breast imaging
Area of Interest: Breast
Procedure: Education
Procedure: Biopsy
Technique: Elastography
Technique: Ultrasound
Technique: Ultrasound-Colour Doppler
Technique: Mammography
Special Focus: Neoplasia Case Type: Clinical Cases
Authors: Daniela Condesso, Luciana Barbosa, Elsa Nunes, Fátima Peralta, Ângela Moreira
Patient: 58 years, female

Clinical History:

A 58-year-old female patient referred to our institution for further evaluation of an ill-defined nodular density in the left lower quadrant observed in a screening mammography. The patient had no significant clinical background or symptoms. No abnormalities during physical examination were reported.

Imaging Findings:

Ultrasound revealed a 6.4 mm solid nodular lesion in the same mammographic location, slightly heterogeneous with an hyper-echoic component (Fig.1). The margins were irregular and partially ill-defined and peripheral vascularisation with Doppler ultrasound assessment was noted (Fig. 2). Elastographic evaluation of this lesion was also performed demonstrating some features suggestive of malignancy such as less compressibility and more stiffness comparing to the surrounding tissue (Fig. 3). The strain ratio obtained was 5.4, increasing the malignancy suspicion (Fig. 4). A core biopsy using a 14 gauge needle was then performed but it revealed to be inconclusive so the patient underwent an open biopsy marked with a metal harpoon due to the highly suspicious imaging features (Fig. 5). The histological result was of a granular cell tumour of the breast which was subsequently excised (Fig. 6).

Discussion:

Granular cell tumours (also referred to as Abrikosoff’s tumours) are rare and usually benign lesions, preferably located in the head or neck, the tongue being the most affected organ. They seem to be derived from peripheral nervous system Schwann cells, arising in the breast in about 6% of cases. Clinically, these tumours usually present as a hard painless lump because of their fibrous consistency. A wide range of imaging characteristics is reported [1-2]. On mammography, they can be well-defined or irregular/spiculated lesions. The same variability can be shown on ultrasound [2] but some series report high rate of partial hyperechogenicity/hyper-echoic halo due to the infiltrative growth pattern [3], as was observed in this case. The tumour pathological properties, such as its fibrous consistency and infiltrative growth pattern, are responsible for the malignant imaging appearance and the differential diagnosis is made mainly with breast carcinoma [1]. Therefore, the final diagnosis is only possible by histological assessment.

The therapeutic procedure is complete surgical excision to avoid tumour recurrence (although rare, it has been
Differential Diagnosis List: Breast granular cell tumour, Breast carcinoma, Benign breast lesions with malignant imaging features

Final Diagnosis: Breast granular cell tumour

References:


**Figure 1**

*Description:* Ultrasound evaluation demonstrating a nodular lesion with partial ill-defined margins and heterogeneous texture. **Origin:** Medical Imaging Department and Faculty of Medicine, University Hospital of Coimbra, Portugal
Figure 2

Description: Highly vascular lesion on Doppler ultrasound

Origin: Medical Imaging Department and Faculty of Medicine, University Hospital of Coimbra, Portugal
Description: Elastographic evaluation demonstrating the lesion's stiffness. Origin: Medical Imaging Department and Faculty of Medicine, University Hospital of Coimbra, Portugal

Figure 3
Figure 4

**Description:** Elastographic evaluation: high strain ratio suggesting malignancy

**Origin:** Medical Imaging Department and Faculty of Medicine, University Hospital of Coimbra, Portugal
**Figure 5**

**Description:** Tumour marked with a guide wire for further open biopsy

**Origin:** Medical Imaging Department and Faculty of Medicine, University Hospital of Coimbra, Portugal
**Description:** Mammographic evaluation of the surgical piece. Total excision of the tumour. **Origin:** Medical Imaging Department and Faculty of Medicine, University Hospital of Coimbra, Portugal.