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GRANULAR CELL TUMOR IN THE BREAST MIMICKING BREAST CARCINOMA

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Granular cell tumor is also known as a granular cell myoblastoma, Abrikossoff's tumor, granular cell nerve sheath tumor or granular cell scwhannoma. It is a rare soft-tissue mass that can develop in any soft tissue. Most commonly it appears in the tongue (40%), the oral cavity or in the subcutaneous tissue. In rare occasions it is reported as a breast mass, mimicking a carcinoma. Not only clinically, but also on mammography, ultrasonography and macroscopically. Diagnosis can only be made on histology, emphasizing once again the importance of a thorough pre-operative multi-disciplinary assessment. We describe a case in which a woman presents herself with a palpable nodule in the breast in which clinical investigation, mammography and especially sonography indicated the presence of a malignancy. Only after we conducted a core biopsy for pre-operative histological investigation, we could make the diagnosis of a granular cell tumor, preventing an unnecessary mastectomy. The patient refused however local excision and was followed up with mammography and sonography.

Key-word: Breast neoplasms, diagnosis.

Case report

A black woman of 30 years old presented to the gynecologist with a mass in the right breast. On clinical investigation a hard palpable mass was identified in the medial part of the right breast. There was no skin retraction or nipple discharge, nor were there palpable axillary lymph nodes. A mammography revealed an asymmetric stellate mass of 20 millimeter, located deep and medial in the right breast. It is causes distortion and retraction of the pectoral muscle, as shown on the craniocaudal images of the right breast (Fig. 1 and 2). The mass had irregular borders and was clearly identified, because of the relative low density of the breast tissue and the type 3 amount of tissue, i.e. between 25 and 50% of glandular tissue, relative to the amount of fatty tissue. Immediately after, we performed a sonography, showing a hypodense mass of 15 millimeter medial in the right breast. The mass had irregular borders, showed marked posterior acoustic shadow and had increased vascularity with a 'feeding vessel' as shown on Doppler (Fig. 3 and 4). As part of the pre-operative investigation for typing and grading of a breast carcinoma we performed 4 ultrasound-guided core biopsies of this lesion. Histology showed proliferation of loose cells with an eosinophylic cytoplasm with a small round core without nuclear atypia, indicating a benign granular cell tumor. Also immunuhistochemical findings showed staining typical for a benign granular cell tumor, thus preventing unnecessary and mutilating mastectomy. The patient refused local excision. After a half year and a year follow up, the tumor showed no growth and the patient was lost from follow-up.

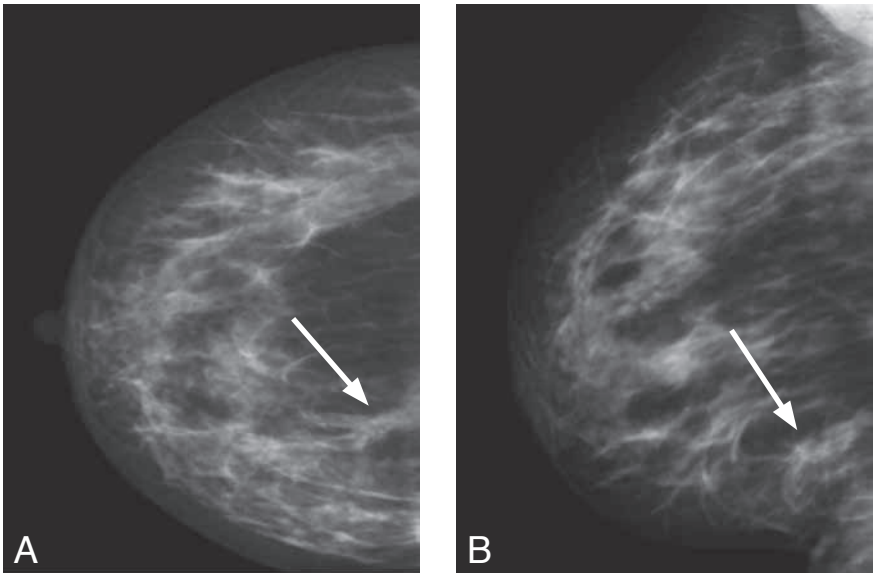

Fig. 1. — Craniocaudal and mediolateral oblique mammography of the right (RCC) breast showing a stellate mass deep and medial in the right breast with attraction of the prepectoral muscle.

Discussion

Granular cell tumor was first described in 1924 by the Russian pathologist Aleksei Ivanovich Abrikossoff who referred to it as a myeloblastoma because of the similar appearance of striped muscle cells and the believe that they arise from myoblastic cells. This is a rare tumor, and recent studies suggest that they are from neural origin and arise from Schwann cells. However because on a cellular level they are much differences with schwannoma, it should still be regarded as a separate entity. Some still believe that it is a degenerative process that can arise in all cells. It can appear in virtual any soft tissue with a predilection in the head and neck area (45-65%). It is most commonly found in the tongue (40%) and the oral cavity. It is relatively rare (5-8%) in the breast area. We found 47 case reports and several series, including lesions in other regions. Mostly it is benign tumor and only a minority is malignant (2,5%). Only in a minority of the

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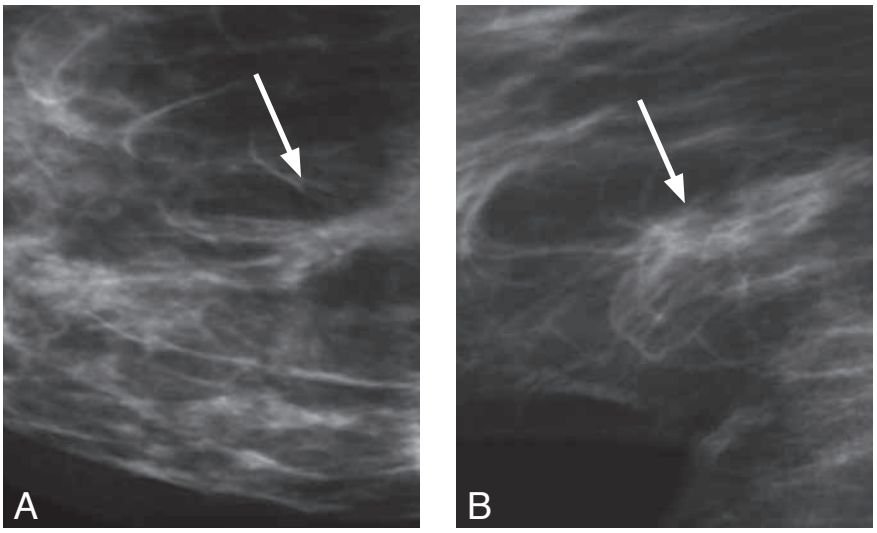

Fig. 2. — Enlargement mammography of the right (RCC) breast, showing a stellate mass deep in the breast with attraction of the prepectoral muscle.

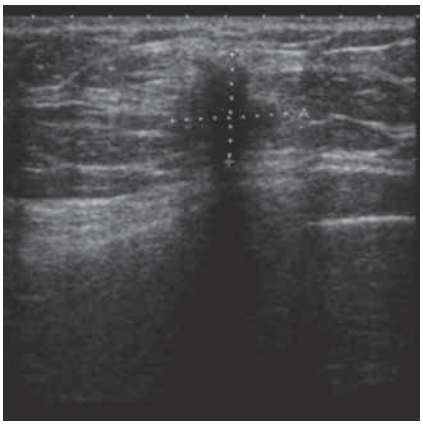

Fig. 3. — Ultrasound of the right breast shows a hypodense mass with a marked retro-acoustic shadow and irregular borders. Diameters of 14,8 × 14,0 millimeter.

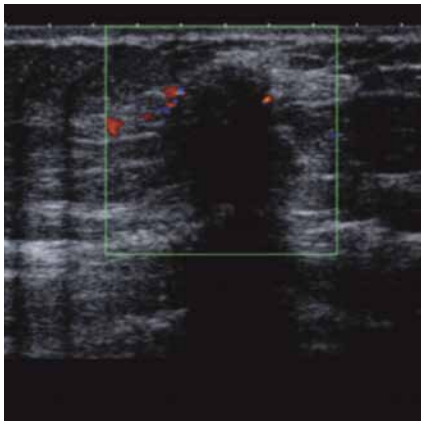

Fig. 4. — Ultrasound with colour Doppler mapping shows a large irregular mass with an adjacent 'feeding' vessel and marked hypervascularity in the margin.

cases a benign one mimics a malignancy, as shown in the study of Boulat et al. in 1994 were 3 of 159 reported granular cell tumors in the breast mimicked breast carcinoma. Overall a ratio of 1 granular cell tumor to 1000 carcinomas of the breast is likely. It is more common found in premenopausal black woman. It is treated by local wide excision and however it has relative high recurrence rate after excision, it has a good prognosis. The diagnosis is exclusively made on pathology. Microscopic investigation of the benign form show polygonal cells with a granular eosinophylic cytoplasm and small round nuclei without atypia. The malignant form shows high mitotic activity and pleiomorphic cellular tissue. Immuno-histochemical staining shows reactivity for S100 protein, CD 68 and neuron specific endolase. Recommended surgical treatment is wide local excision with tumor-free margins. Malignancy is rare and therefore radical mutilating surgery should be avoided especially in the breasts of a young woman like in our case. However is best removed, patients still can decide by themselves and can never be obligated, like in our case.

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