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REVIEW

Case Report: Granular Cell Tumor In Breast

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ABSTRACT

Granular cell tumor (GCT) of the breast is an unusual neoplasm, tipically benign, it represents between 5-6% of all GCT cases. These tumors are more common in middle-aged premenopausal women with a greater predilection African American race [1]. Nevertheless, there are also cases described in men [2-4]. Almost all of them are favorable, the malignant cases are uncommon (only 1-3%). Sometimes it could be clinically and radiologically confused with a malignant breast tumor; so it's very important to make a differential diagnosis. The choice therapy is an extensive local extirpation with free margins [5], without the need for adjuvant chemotherapy or radiotherapy. Our case is a 61-year-old woman with a GCT, and three years ago a history of breast carcinoma in the same breast.

1. Introduction

Granular cell tumor (GCT) of the breast is an atypical neoplasm, usually benign, it represents between 5-6% of all GCT cases.

In the firs instance it was described in 1854 by Weber; and then, in 1926, it was described in detail by Abrikossoff, who supposed a myogenic origin and determinated it as "granular cell myoblastoma [6]". Later researchers described its origin in schwann cells, due to the positivity of the S-100 protein and the similarity of tumor cells to schwann cells [7].

Although GCT is a well established identity, it very often presents a clinical, radiological and even anatomopathological aspects very similar to breast carcinoma or fibroadenoma, being a diagnostic challenge for gynecologists, oncologists, radiologists and pathologists.

Our case is a 61-year-old woman with a GCT, and three years ago a history of breast carcinoma in the same breast.

2. Case Report

61-year-old woman with menarche at age 12, menopause at age 47. Denies use of oral contraceptives pill or hormone replacement therapy. Two full-term pregnancies.

As an important history, four years ago she was diagnosed with breast cancer (infiltrating ductal carcinoma of the right breast, Nottingham's grade II, pT1c pN0 M0, luminal immunophenotype B) Treated by breast-conserving surgery (quadrantectomy). Oncotype 11%. Followed by whole-breast irradiation (50 Gy) and a boost to the tumour bed (16 Gy) and then a hormone therapy.

She performs medical check-ups until a control mammogram describes a new 9 mm nodule/lymph node, BI-RADS 4a in the right breast.

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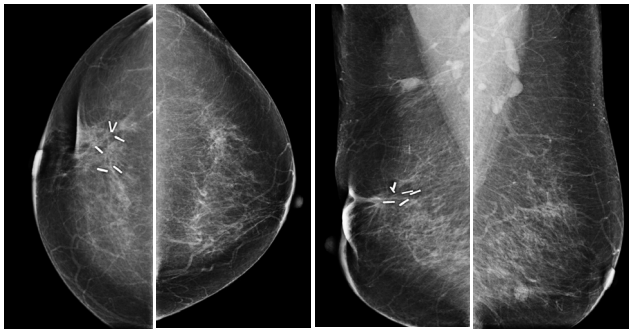

Figure 1. Mammogram (CC and MLO view). MLO view of the right breast showed well defined mass-forming in the upper quadrant (arrow)

An ultrasound-guided breast biopsy is performed and in the pathological anatomy, proliferation of solid lobed pattern with fibrovascular tracts is described, consisting of rounded cells of granular broad cytoplasm PAS+ and round or oval nucleus with scarce anisonucleosis, compatible with GCT (It is likewise recognised as Abrikossoff's tumor).

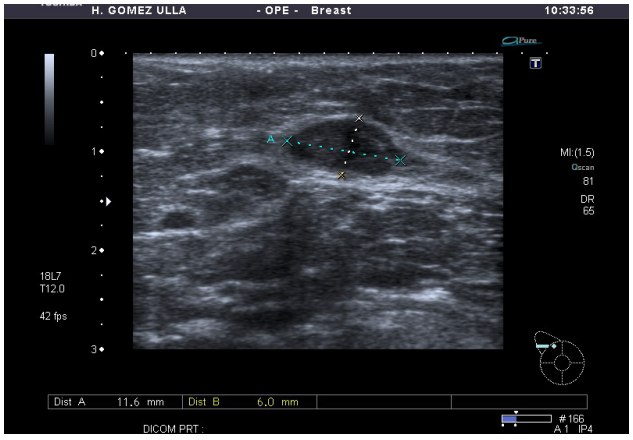

Figure 2. Ultrasound of the right breast showed a regular hypoechoic lesion

Later, a lumpectomy was performed, and the diagnosis was confirmed by the histological study. The postoperative period was without incidents and the patient remains asymptomatic at present. She continues her medical revisions [8] due to her oncological history of breast cancer.

3. Discussion

GCT is an unusual tumor that can emerge anywhere in the body, but the most common origin is the tongue, followed by the soft tissues [9-10]. Appears on the breast the breast only in In 5–6 % of cases and it represents around 1/1000 of all breast tumors.

These tumors are more common in middle-aged premenopausal women with a greater predilection African American race[] [11]. Nevertheless, there are also cases described in men [12-14].

Almost all of the are favorable, the malignant cases are uncommon (only 1-3%) [15-16].

Sometimes it could be clinically and radiologically confused with a malignant breast tumor, so it's very important to make a differential diagnosis [17] because, although they have similarities in diagnosis, the treatment and the prognosis are very different [18,19]. In young women the clinical and radiological presentation may simulate the characteristics of a fibroadenoma [20-21].

Appears as a painless single node, with a size less than 3 cm, but also can be presents as a multifocal. It is usually appear in the top internal quadrant, in contrast to breast carcinoma, which is more usually located in the top external quadrant, but it can appear in any location.

On mammography, it presents as an ill-defined or spiculated lesions, comparable to breast carcinoma.

It is not possible to differentiate a GCT from a carcinoma without a biopsy, so the ultrasound-guided biopsy of the lesion is the diagnosis of choice [22].

It is essential to know the immunochemistry to confirm the diagnosis, it is fimly immunoreactive for the S-100 protein, they also exhibit positivity for the specific neuronal enolase (NSE), CD68 and vimentin. Tumor cells are negative for epithelial markers like cytokeratin and epithelial membrane antigen and carcinoembryonic antigen [23].

The choice therapy is an extensive local extirpation with free margins [24], without the need for adjuvant chemotherapy or radiotherapy.

4. Conclusion

Although GCT is an unusual neoplasm it is very important to make the differential diagnosis due to they can simulate malignant breast tumors.

A diagnosis error can lead to unnecessary treatment, like a mastectomy, which has great physical and emotional impact.

The choice treatment is always a surgical excision with extensive margins, due to cases of malignancy have been described.

References

[1] Ssi-Yan-Kai G, Barthier S, Trichot C, Prevot S, De Laveaucoupet J. Granular cell breast cancer: A rare misleading lesion. Diagn Interv Imaging, 2015, 96: 9-287.

[2] Mariscal A, Perea RJ, Castellá E, Rull M. Granular cell tumor of the breast in a male patient. AJR 1995, 165: 4-63.

[3] Rogall B, Propeck P. Granular cell tumor of the

 DOI: https://doi.org/10.30564/jor.v1i3.1695

breast in a male (letter). AJR 1995, 164: 230.

[4] Damiani S, Koerner FC, Dickersin GR, Cook MG, Eusebi V. Granular cell tumour of the breast. Virchows ArchivA Pathol Anat, 1992, 420: 26-219.

[5] Espié M. The management of breast cancer. Diagn Interv Imaging, 2014, 95(7-8):7-753.

[6] Brown AC, Audisio RA, Regitnig P. Granular cell tumour of the breast. Surg Oncol, 2011, 20: 97-105.

[7] Adeniran A, Al-Ahmadie H, Mahoney MC, Robinson-Smith TM. Granular cell tumor of the breast: A series of 17 cases and review of the literature. Breast J. 2004, 10: 31-528.

[8] El Aouni N, et al. Granular cell tumor of the breast. Diagn Cytopathol, 2007, 35(11): 725–727.

[9] Scaranelo AM et al. Granular cell tumour of the breast: MRI findings and review of the literature. Br J Radiol, 2007, 80: 970–974.

[10] Filipovski V et al. Granular cell tumor of the breast: a case report and review of literature. Cases J, 2009, 2: 8551.

[11] Ssi-Yan-Kai G, Barthier S, Trichot C, Prevot S, De Laveaucoupet J. Granular cell breast cancer: A rare misleading lesion. Diagn Interv Imaging, 2015, 96: 9-287.

[12] Mariscal A, Perea RJ, Castellá E, Rull M. Granular cell tumor of the breast in a male patient. AJR, 1995, 165: 4-63.

[13] Rogall B, Propeck P. Granular cell tumor of the breast in a male (letter). AJR, 1995, 164: 230.

[14] Damiani S, Koerner FC, Dickersin GR, Cook MG, Eusebi V. Granular cell tumour of the breast. Virchows ArchivA Pathol Anat, 1992, 420: 26-219.

[15] Mulcare R. Granular cell myoblastoma of the breast. Ann Surg, 1968, 168: 8-262.

[16] Pathania K, Bhargava S. Granular cell tumour of breast: A mimic of carcinoma. Med J Armed Forces India, 2010, 66: 4-292.

[17] Gold DA, et al. Granular cell tumor of the breast. Case report of an occult lesion simulating carcinoma. Breast Dis., 1989, 2: 5-211.

[18] llkhanipour ZS, Harris KM, Kanbour Al. Granular cell tumor of the breast: two case reports mimicking carcinoma. Breast Dis., 1993, 6: 5-221.

[19] A. Sanguinetti et al. Myoblastoma of the breast: Our experience and review of literature. International Journal of Surgery Case Reports, 2016, 20(Supplement): 5-7.

[20] DeMay RM, Kay S. Granular cell tumor of the breast. Pathol Annu, 1984, 19: 48-121.

[21] Umansky C, Bullock WK. Granular cell myoblastoma of the breast. Ann Surg, 1968, 168: 7-810.

[22] Bassett LW, Cove HC. Myoblastoma of the breast. AJR, 1979, 132: 3-122.

[23] Hammas N, El Fatemi H, Jayi S, Hafid I, Fikri G, El Houari A, et al. Granular cell tumor of the breast: A case report. J Med Case Rep., 2014, 8: 8-465.

[24] Espié M. The management of breast cancer. Diagn Interv Imaging, 2014, 95(7-8): 7-753.

DOI: https://doi.org/10.30564/jor.v1i3.1695