Olgu Sunumu / Case Report
doi: 10.18678/dtfd.538404

Düzce Tıp Fakültesi Dergisi / Duzce Medical Journal
2019;21(2):142-144

A Rare Cause of Breast Mass: Granular Cell Tumor

Memede Kitlenin Nadir Bir Nedeni: Granüler Hücreli Tümör

Semra DEMİRLİ ATICI[1]
0000-0002-8287-067X
Semra SALİMOĞLU[1]
0000-0002-9849-244X
Buğra SAĞLAM[1]
0000-0002-6025-9570
Gülen GÜL[2]
0000-0001-5750-0098
Cengiz AYDIN[1]
000-0003-4713-2871

[1]Tepecik Training and Research Hospital Department of General Surgery, İzmir

[2]Tepecik Training and Research Hospital Department of Pathology, İzmir

ABSTRACT

Granular cell tumor is a rare type of soft tissue tumor originated from Schwann cells and often affecting head and neck region. Granular cell tumor, which may have many different organ involvements in the body, can rarely observed in breast tissue. A 57-year-old postmenopausal woman underwent excisional biopsy in another health facility due to a palpable rapidly growing painless mass on her left breast. Re-excision with wide surgical margins was performed to the patient whose biopsy was reported as granular cell tumor of breast with positive surgical margin. Postoperative follow-up was uneventful, and the patient was discharged without complication. Wide local excision should be performed to prevent local recurrence in the surgical treatment of granular cell breast tumor, which is similar to breast carcinoma in both radiological and clinic appearance. In this case report, we aimed to present diagnosis and treatment of granular cell tumor with current literature knowledge.

Keywords: Granular cell tumor; breast cancer; calretinin.

ÖZ

Granüler hücreli tümör sıklıkla baş ve boyun bölgesini etkileyen, Schwann hücrelerinden kaynaklanan, nadir bir yumuşak doku tümörü tipidir. Vücutta pek çok farklı organ tutulumu olabilen granüler hücreli tümör, nadir de olsa memede de gözlenebilmektedir. Elli yedi yaşında postmenopozal kadın hastaya sol memede hızlı büyüyen ele gelen ağrısız palpabl kitle nedeniyle dış merkezde eksizyonel biyopsi uygulanmıştı. Biyopsisi memenin granüler hücreli tümörü olarak raporlanan ve cerrahi sınır pozitifliği olan hastaya, geniş sağlam cerrahi sınırlarla reeksizyon yapıldı. Postoperatif takiplerinde bir problem yaşanmayan hasta sorunsuz bir şekilde taburcu edildi. Klinik ve radyolojik olarak meme karsinomuna benzerlik gösteren granüler hücreli meme tümörünün cerrahi tedavisinde lokal nüksü engellemek amacıyla geniş lokal eksizyon yapılmalıdır. Bu olgu sunumunda, granüler hücreli tümörün tanı ve tedavisini güncel literatür bilgisi eşliğinde sunmayı amaçladık.

Anahtar kelimeler: Granüler hücreli tümör; meme kanseri; calretinin.

INTRODUCTION

Granular cell tumor (GCT) is a type of soft tissue tumor which is originated from Schwann cells and was first described in the breast by Abrikossoff in 1931 (1). GCT can occur in any part of the body, and often affects the tongue, head, and neck region (1). The incidence of granular cell tumors of the breast is 6-8% (2). Although GCT usually has a benign character, 1% of all of the GCT cases can also reveal malign character (2). GCT of the breast is uncommon, and it is difficult to identify since granular cell breast tumor (GCBT) mimics breast carcinoma both clinically and radiologically. However, although they have similarities, it is vital to make a differentiation between them since the surgical and postoperative treatment approach and the prognosis are very different.

Sorumlu Yazar
Corresponding Author
Semra DEMİRLİ ATICI
smrdemirli@hotmail.com

Geliş Tarihi / Received : 11.03.2019
Kabul Tarihi / Accepted : 25.07.2019
Çevrimiçi Yayın Tarihi / Available Online : 29.07.2019

CASE REPORT

A 57-year-old postmenopausal woman presented with a palpable rapid growing painless mass on the left breast, which caused a distorted skin. She had no family history of cancer and also had no history of chronic illness, drug use, operation, or smoking. Her breast ultrasonography (USG) revealed a non-selectable spicular contoured nodular opacity in the upper inner quadrant of the left breast. A tru-cut biopsy was performed with the suspicion of breast carcinoma. Since the tru-cut biopsy did not distinguish between benign and malignant, the patient underwent an excisional biopsy.

Histopathological results of the biopsy specimen macroscopically revealed a granular cell tumor which was 1.3x0.8x1 cm in size. Microscopically the tumor had low-grade mitotic activity without local invasion. Hormone receptors were negative, and surgical margin positivity was detected. Pathology preparates were consulted with the department of pathology, and the diagnosis of granular cell tumor was confirmed. Histopathological examination of the tumor consisted of cells with an oval-round nucleus and eosinophilic granular cytoplasm (Figure 1 and 2). Tumor cells were S100 positive (Figure 3) and CD68 negative immunohistochemically. It was also stained positively with PAS (Figure 4).

The patient was diagnosed with granular cell tumor, and re-excision was performed with clear surgical margins. Since the malignancy risk decrease in the cases of small-sized tumors without local invasion and low-grade mitotic activity, we did not perform sentinel lymph node biopsy. The patient was discharged on the postoperative second day without any complications. She was followed up for fourteen months without any local recurrence or distant metastasis.

DISCUSSION

GCTs of the breast is a rarely seen malignancy which originates from perineural Schwann cells between the lobular breast tissues (1,2). GCT mostly affects the head, and neck region, and soft tissue and generally has a benign character. Malignant features are present in 1% of the cases (1,2). The incidence of GCBT has increased in middle age, premenopausal, and black women (2,3).

Although GCT is mostly seen in the upper inner quadrant of the breast as in our case, breast carcinoma is usually located in the upper outer quadrant (3). GCBT often presents with a painless, mobile, mass (2,4). The mass can cause distorted skin. GCBT can be confused with breast carcinoma clinically because of distortion in breast skin and fibroadenoma with a mobile mass without pain (4,5).

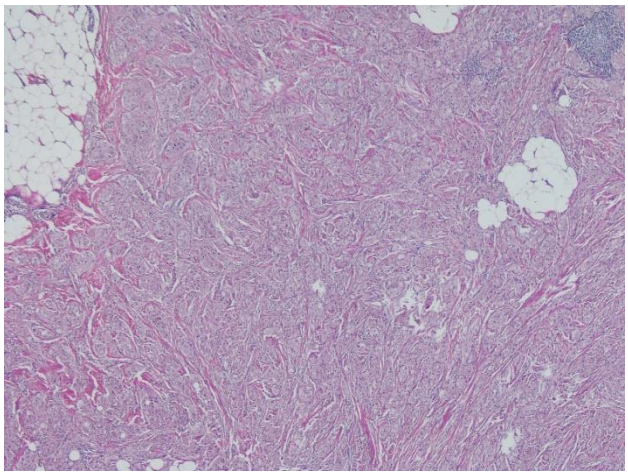

Figure 1. Tumor cells in adipose tissue (Hematoxylin & Eosin, 40x)

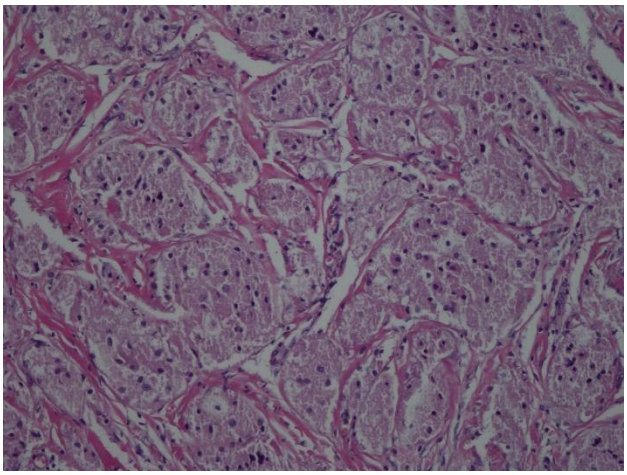

Figure 2. Oval-round nucleus, tumor cells with granular cytoplasm (Hematoxylin & Eosin, 40x)

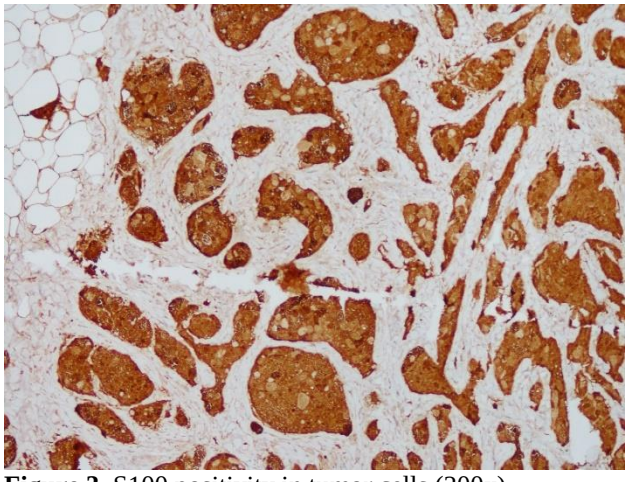

Figure 3. S100 positivity in tumor cells (200x)

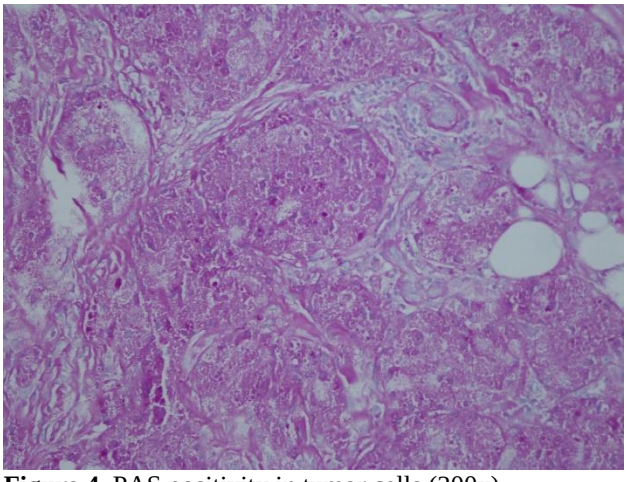

Figure 4. PAS positivity in tumor cells (200x)

USG and mammography can lead to a misdiagnose since carcinoma and GCBT have similar appearances such as irregularity, spiculation, stellation, and isodensity. Microcalcification in mammography is not an expected radiological finding for GCBT. GCBTs are more commonly described as spicular extensions or well-defined masses (2,4). PET-CT can accurately differentiate GCBT from a malignant tumor since it does not show increased glucose uptake (6).

The hormone receptor is negative, and neoplastic cells typically express S100 due to cytoplasmic lysosome content (4,5). S-100 protein, PAS-positive staining, and cytokeratin negativity differentiate GCBT from breast carcinoma immunohistochemically (4,5). Moreover, the study by Jiménez-Herrero et al. (7) showed that calretinin is an important marker in the differential diagnosis of GCBT and carcinoma.

Among the GCT, 1% of the cases have a malignant character with high rate metastasis and poor prognosis (8). Local invasion, increased mitotic rate, rapid growing, mass size (>4 cm), variation in cell size, and shape suggests the malignant variant of GCT (9). In our case, due to the small size and low mitotic activity of the tumor that indicated low malignancy risk, we did not prefer to perform sentinel lymph node biopsy as reported in the literature (4,5).

The primary treatment of GCBT is surgical resection. These tumors have a good prognosis and can be treated with wide surgical excision (4,5). Inadequate excision, or surgical margin positivity can cause local recurrences. However, Brown et al. (10) reported that after extensive excision, approximately 2-8% of recurrence rates could be observed. Except for the malignant cases, sentinel lymph node biopsy or axillary dissection is not routinely recommended (4,5,10). However, Brown et al. (10) reported that surgical excision is the only treatment for GCTs, adjuvant chemotherapy, or radiotherapy are not needed. The efficacy of postoperative radiotherapy and chemotherapy in the treatment of GCBT is not known due to the limited number of studies.

In conclusion, GCBT is a benign disease that can mimic breast cancer clinically and radiologically. GCBT diagnosis can be established with the immunohistochemical examination of S-100 and calretinin. Surgical removal of the mass with wide excision can prevent local recurrence.

Informed Consent: Written informed consent was obtained from the patient who participated in this study.

Conflict of Interest: All the authors declared no conflict of interest.

Financial Disclosure: The authors declared that this study had received no financial support.

REFERENCES

1. Abrikossoff AI. Weitere untersuchungen über myoblastenmyome [Further investigations on myoblastomas]. Virchows Arch Pathol Anat Physiol Klin Med. 1931;280(3):723-40.
2. Ordóñez NG, Mackay B. Granular cell tumor: a review of the pathology and histogenesis. Ultrastruct Pathol. 1999;23(4):207-22.
3. Fujiwara K, Maeda I, Mimura H. Granular cell tumor of the breast mimicking malignancy: a case report with a literature review. Acta Radiol Open. 2018;7(12):2058460118816537.
4. Pergel A, Yucel AF, Karaca AS, Aydin I, Sahin DA, Demirbag N. A therapeutic and diagnostic dilemma: granular cell tumor of the breast. Case Rep Med. 2011;2011:972168.
5. Castillo Lara M, Martínez Herrera A, Torrejón Cardoso R, Lubián López DM. Granular cell tumor in breast: a case report. Breast Cancer (Dove Med Press). 2017;9:245-8.
6. Hoess C, Freitag K, Kolben M, Allgayer B, Laemmer-Skarke I, Nathrath WB, et al. FDG PET evaluation of granular cell tumor of the breast. J Nucl Med. 1998;39(8):1398-401.
7. Jiménez-Herrero E, Hervás-Marín D, Vera-Sempere FJ. Expresión de calretinina en el tumor de células granulares: análisis del gradiente de intensidad en la inmunotinción con correlación clínico-patológica [Calretinin expression in the granular cell tumor: an analysis of the immunostaining intensity gradient and its clinicopathological correlation]. Rev Esp Patol. 2014;47(3):149-155.
8. Kondi-Pafiti A, Kairi-Vassilatou E, Liapis A, Bakalianou K, Iavazzo Ch, Hasiakos D. Granular cell tumor of the female genital system: clinical and pathologic characteristics of five cases and literature review. Eur J Gynaecol Oncol. 2010;31(2): 222-4.
9. Nasser H, Ahmed Y, Szpunar SM, Kowalski PJ. Malignant granular cell tumor: a look into the diagnostic criteria. Pathol Res Pract. 2011;207(3):164-8.
10. Brown AC, Audisio RA, Regitnig P. Granular cell tumour of the breast. Surg Oncol. 2011;20(2):97-105.