Images: Granular Cell Tumour of the Breast Mimics a Malignancy

Muhammed Faizal Ayub · Selvi Radhakrishna ·
Ranjani Chakravarthy

Received: 11 February 2012 / Accepted: 6 March 2012 / Published online: 20 March 2012
© Indian Association of Surgical Oncology 2012

Abstract Five percent of granular cell tumour occurs in the breast. They are benign in nature but mimick a carcinoma on imaging (mammography and breast ultrasound). We present radiological and histopathological images of granular cell tumour in the breast.

Keywords Granular cell tumour · Breast

Fifty-two years old, mother of 3 children, post menopausal, underwent her first screening mammogram. Her mother at age 62 years had breast cancer. She did not have any comorbid conditions. Clinical breast examination was normal

Her mammogram showed a spiculated mass lesion in the upper outer quadrant of the left breast- (BIRADS-5). Breast ultrasound showed a taller than wider, irregular, hypo echoic mass lesion, with after shadowing. (US BIRADS -5) (Figs. 1, 2, 3 and 4).

Ultrasound guided core needle biopsy was done. Histopathology showed large polygonal cells with abundant

eosinophilic cytoplasm and small to oval nuclei arranged in nests and trabeculae separated by collagenous tissue. Immunohistochemistry was positive for S 100, CD 68 and vimentin. Cytokeratin and SMA were negative.

She underwent a wide local excision. Final histopathology confirmed a granular cell tumour. Resected margins were clear. No further treatment was required and the patient was placed on regular follow up.

Discussion

Granular cell tumours are usually benign tumours that can arise from any part of the body. Five percent of granular cell tumours occur in the breast. The origin of granular cell tumour is probably from Schwann cells [1, 3]. The clinical and radiological appearance closely mimics a breast carcinoma particularly the schrrious type because of its infiltrative growth pattern with fibrosis. There may be fixation to pectoral muscles and skin tethering [1–4].

Histopathology reveals large polygonal cells with abundant eosinophilic cytoplasm. These cells are arrnged in distintive rounded groups. Immunohistochemistry is essential to differentiate it from carcinomas. Cytokeratin is positive in a carcinoma, but negative in a granular cell tumour. SMA is also negative in granular cell tumour where as S100 is strongly positive [1]. They are usually benign but very rarely mitotic figures, cellular pleomorphism, necrosis and spindle cell structures may be noted. This is suggestive of a malignancy [4].

M. F. Ayub · R. Chakravarthy
Apollo Speciality Hospital,
No: 320, Padma Complex, Anna Salai,
Chennai 35 Tamil Nadu, India

M. F. Ayub
e-mail: mfamd@rediffmail.com

R. Chakravarthy
e-mail: cpranjani@yahoo.com

S. Radhakrishna (✉)
Chennai Breast Centre,
No 47, South Beach Avenue, MRC Nagar,
Chennai 600028 Tamil Nadu, India
e-mail: selvi.breastclinic@gmail.com

Fig. 1 a, b, c Craniocaudal, MLO view and magnification view of the left breast

Fig. 2 Ultrasound images of the spiculated mass seen on the mammogram

Fig. 3 Nests and sheets of polygonal cells with abundant granular eosinophilic cytoplasm and small nuclei(H and E,40X)

Treatment is wide local excision. Complete surgical excision is curative. Axillary clearance and further adjuvant chemotherapy or radiotherapy is not required.

Conclusion

Granular cell tumour in the breast is usually benign. It closely mimics a malignancy on a mammogram and on breast ultrasound. Awareness of its existence is important. Routine histopathology with Immunohistochemistry clinches the diagnosis. Wide local excision is curative.

Fig. 4 Tumour cells showing positive S100 immunostain

References

1. Qureshi NA, Tahir M, Carmichael AR (2006) Granular cell tumour of the soft tissues: a case report and literature review. *Int Semin Surg Oncol* 3:21
2. Kim E-k, Lee MK, Oh KK (2000) Granular cell tumour of the breast. *Yonsei Med J* 41(5):673–675
3. Gogas J, Markopoulos C, Kouskos E, Gogas H, Mantas D, Antonopoulou Z, Kontzoglou K (2002) Granular cell tumor of the breast: a rare lesion resembling breast cancer. *Eur J Gynaecol Oncol* 23(4):333–334
4. Tobin CE, Hendrix TM, Geyer SJ, Mendelson E, Resnikoff L (1996) Breast imaging case of the day. *Radiographics* 16:983–985