



Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Metaplastic breast carcinoma with osseous differentiation: A rare case report



Abdulwahid M. Salih^a, F.H. Kakamad^{b,c,*}, Yadkar A. Saeed^d, Aso S. Muhialdeen^d

^a Faculty of Medical Sciences, School of Medicine, Department Surgery, University of Sulaimani, François Mitterrand Street, Sulaimani, Kurdistan Region, Iraq

^b Faculty of Medical Sciences, School of Medicine, Department Cardiothoracic and Vascular Surgery, University of Sulaimani, François Mitterrand Street, Sulaimani, Kurdistan Region, Iraq

^c Bioscience Center, Hamdi Street, Sulaimani, Kurdistan Region, Iraq

^d Sulaimani Teaching Hospital, Sulaimani, Kurdistan Region, Iraq

ARTICLE INFO

Article history:

Received 22 February 2017

Received in revised form 14 March 2017

Accepted 16 March 2017

Available online 21 March 2017

Keywords:

Metaplastic

Osseous differentiation

Hard mass

ABSTRACT

INTRODUCTION: Metaplastic breast carcinoma (MBC) is a rare type of breast cancer. Osseous differentiation is a very rare subtype. Reporting this kind of case is important because its clinical course and line of management are poorly mentioned in the literatures. We present a very rare case of MBC with osseous differentiation. A 48-year-old female presented with painless hard mass of the left breast. Examination and investigations showed MBC with osseous differentiation. She was managed by operation with adjuvant chemotherapy.

CONCLUSION: MBC with osseous differentiation is a very rare type of breast carcinoma presenting with hard mass and managed by mastectomy, axillary lymph node sampling and adjuvant chemotherapy.

© 2017 The Author(s). Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Metaplastic breast carcinoma (MBC) is a heterogeneous group of neoplasm which is characterized by a closely related mixture of adenocarcinoma with areas of squamous, spindle, osseous and chondroid differentiation [1]. MBC is a rare type of breast cancer comprising <1% of all invasive breast cancers [2]. Osseous differentiation is a very rare subtype of MBC [3]. Because of the rarity of the condition, clinical and pathological characteristics are not fully understood [2]. In line with SCARE guide line, we report a case of MBC with extensive osseous differentiation [4].

1.1. Patient information

A 48-year-old house wife (post menopausal) presented with painless lump in her left breast of 2 month duration, rapidly grew in size, no significant past medical history, negative family history of breast carcinoma.

1.2. Clinical findings

On clinical examination: A hard mass of about 3 × 3 cm in diameter was noted at 5 o'clock of left breast, the mass well defined and not attached to the skin and chest wall, no skin change was observed, there was no nipple retraction & axillary lymph nodes were not palpable.

1.3. Diagnostic assessment

Mammography showed relatively well demarcated and calcified mass with speculated margin (Fig. 1). Breast ultrasound showed calcified hard mass with back ground shadowing measuring about 3 × 3 cm at 5 o'clock. Fine needle aspiration cytology was positive for malignant cells. Core needle biopsy was performed which confirmed metaplastic breast carcinoma with extensive osseous differentiation. Computed tomography (CT) scan of chest & abdomen revealed densely calcified lesion with lobulated outline of about 37 × 31 millimeters at inferior part of left breast (Fig. 2), no distant metastasis was found. Routine hematology and biochemical investigations were within normal limits.

1.4. Therapeutic intervention

Simple mastectomy with axillary lymph node sampling was performed, gross description of specimen showed round, very hard

* Corresponding author at: Faculty of Medical Sciences, School of Medicine, Department Cardiothoracic and Vascular Surgery, University of Sulaimani, François Mitterrand Street, Sulaimani, Kurdistan Region, Iraq.

E-mail address: fahmi.hussein@univsul.edu.iq (F.H. Kakamad).

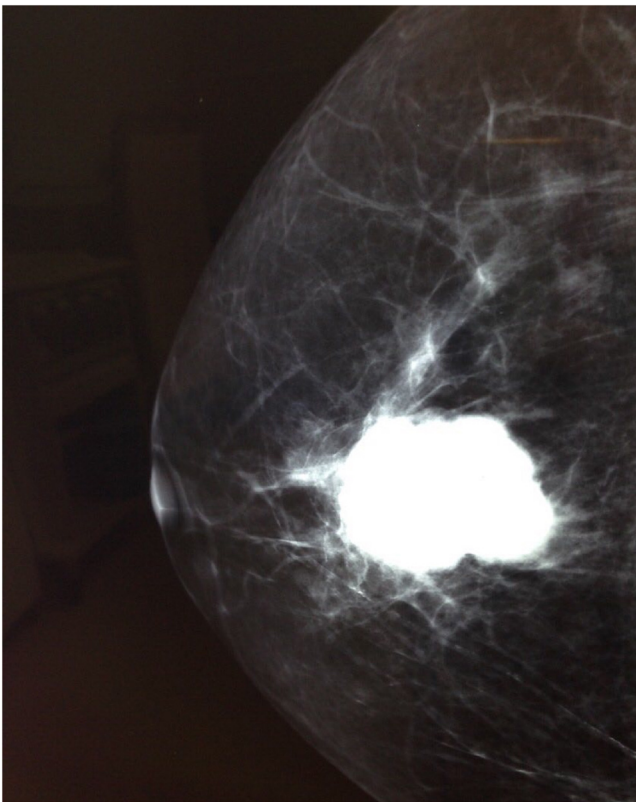


Fig. 1. Mammography shows relatively well demarcated and calcified mass with speculated margin.



Fig. 2. CT scan of chest shows densely calcified lesion with lobulated outline of about 37 × 31 mm at inferior part of left breast.

mass. Microscopic examination showed MBC with osseous differentiation. Immunohistochemistry analysis confirmed the origin of the histologically metaplastic carcinoma (osteosarcoma pattern) by hormone receptor (ER, PR, Her2) negative & cytokeratin CK 7 & AE1\AE3 positive. The patient was sent for chemoradiotherapy and on 6 month follow up there was no recurrence of the disease.

2. Discussion

MBCs are a highly heterogeneous subgroup of tumors recognized as ductal carcinoma with areas of squamous, spindle, chondroid with or without osseous differentiation [1]. Osseous and chondroid differentiation may occur focally in 0.2% of carcinoma of breast, while osseous metaplasia is the rarest subtype [3]. Still there is controversy regarding classification of MBC [2]. Some authors divide the disease into two main subgroups: (1) homogeneous sarcomatoid/spindle cell carcinoma, and (2) heterogeneous carcinosarcoma associated with sarcomatous differentiation (chondroid, osseous, and rhabdoid) [5]. Usually adenocarcinomas showing heterologous cartilage or osteoid pattern are presented together, and as a consequence, there is limited specific information on either of them [1]. The mean age and the clinical characteristics are the same as in other series of MBC [6]. MBC with osseous differentiation shows macroscopic dense calcifications on mammography as in the current case [7]. In case of MBC with heterologous pattern, the correlation between survival or recurrence and nodal metastases is not well understood [1]. Risk factors for developing recurrence in MBC are diffuse cellularity, larger tumor size and atypical metaplasia [8]. MBC is different from typical adenocarcinomas in several aspects. It less commonly affects lymph nodes with an incidence ranging from 6 to 26% while more commonly develops metastatic disease [2]. Rate of recurrence for node-negative invasive ductal carcinoma has ranged from 17% to 20% within 2–5 years of diagnosis. This compares with recurrence rate of 35–62% for MBC within the same time period [9]. The indications of adjuvant chemotherapy and optimal management of MBC (especially osseous differentiation) are uncertain due to the absence of a dependable data [1]. Bellino and associates advised surgical and adjuvant chemotherapy to be performed according to the recommendations for most other breast carcinomas [10]. Viewing from this perspective, we sent our patient to chemotherapy.

In conclusion, MBC with osseous differentiation is a very rare type of breast carcinoma presenting with hard mass and managed by mastectomy, axillary lymph node sampling and adjuvant chemotherapy.

Conflicts of interest

There is no conflict to be declared.

Sources of funding

No source to be stated.

Ethical approval

Approval has been taken from bioscience center.

Consent

Consent has been taken.

Authors contribution

Abdulwahid M. Salih: Surgeon performed the operation and follow up.

Fahmi H. Kakamad: writing the manuscript and follow up.

Yadgar A. Saeed: follow up.

Registration of research studies

researchregistry2164.

Guarantor

Fahmi Hussein kakamad.

References

- [1] Ronggang Lang, Yu Fan, Xilin Fu, Li Fu, Metaplastic breast carcinoma with extensive osseous differentiation: a report of two cases and review of the literature, *Tumori* 97 (1) (2011) 1–5.
- [2] P.J. Barnes, R. Boutilier, D. Chiasson, D. Rayson, Metaplastic breast carcinoma: clinical–pathologic characteristics and HER2/neu expression, *Breast Cancer Res. Treat.* 91 (2005) 173–178.
- [3] J.M. Pollock, A. Green, C. Donnell, D.L. Dyess, J.A. Tucker, Metaplastic breast carcinoma with osseous differentiation: a case report, *South. Med. J.* 99 (2006) 168–170.
- [4] Agha, et al., The SCARE statement: consensus-based surgical case report guidelines, *Int. J. Surg.* (2016) (article in press).
- [5] F.A. Tavassoli, Classification of metaplastic carcinomas of the breast, *Pathol. Annu.* 27 (1) (1992) 89–119, Pt. 2.
- [6] C. Chhieng, M. Cranor, M.E. Lesser, P.P. Rosen, Metaplastic carcinoma of the breast with osteocartilaginous heterologous elements, *Am. J. Surg. Pathol.* 22 (1) (1998) 188–194.
- [7] B. Erguvan-Dogan, C. Yazgan, C. Atasoy, S.D. Sak, S. Tukul, K. Ceyhan, et al., Radiologic-pathologic (conference) of the University of Ankara Medical School. Metaplastic breast carcinoma with osteochondrosarcomatous differentiation, *Am. J. Roentgenol.* 185 (1) (2005) 1593–1594.
- [8] Y. Kijima, Y. Umekita, H. Yoshinaka, T. Owaki, A. Sakamoto, H. Yoshida, et al., A case of breast carcinoma with cartilaginous and osseous metaplasia, *Breast Cancer* 13 (2006) 214–219.
- [9] C.L. Carter, C. Allen, D.E. Henson, Relation of tumor size, lymph node status and survival in 24,740 breast cancer cases, *Cancer* 63 (1) (1989) 181–187.
- [10] R. Bellino, R. Arisio, F. D'Addato, R. Attini, A. Durando, S. Danese, et al., Metaplastic breast carcinoma: pathology and clinical outcome, *Anticancer Res.* 23 (1) (2003) 669–673.

Open Access

This article is published Open Access at sciedirect.com. It is distributed under the [IJSCR Supplemental terms and conditions](#), which permits unrestricted non commercial use, distribution, and reproduction in any medium, provided the original authors and source are credited.