Acta Scientific MEDICAL SCIENCES (ISSN: 2582-0931)

Volume 5 Issue 1 January 2021

Case Report

Metaplastic Breast Cancer - A Difficult Diagnosis Even on Histology

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Received: November 10, 2020

Published: December 22, 2020

Abstract

Metaplastic (carcinosarcomas) carcinomas of breast are a heterogenous group of malignant tumours in which part or all of the carcinomatous epithelium is transforrmed into a nonglandular growth process. We report herein a 71-year-old female who came to us with progressive painless lump in her right breast behind the nipple-areolar complex for 5 months. She had undergone FNAC(Fine Needle Aspiration Cytology) as well as Core biopsy multiple times; and each time it was reported as inflammatory mass only. Core wide local excision followed by mammoplasty was performed and histopathology reported it as metaplastic carcinoma with mesenchymal differentiation.

Though there are already few cases well described in Literature about metaplastic cancer, this paper describes the challenge of FNAC or Core biopsy to sub-classify breast mass.

Keywords: Metaplastic Carcinoma; Mesenchymal Differentiation; Breast Lump

Introduction

Metaplastic breast cancer is a rare form of breast cancer, accounting for less than 1% of all breast cancers [1]. Its presentation is similar to other types of breast cancer both clinically as well as radiologically but it differs from the more common kinds of breast cancer in both its makeup and in the way it behaves.

When the cells of an invasive ductal tumor are examined under a microscope, they appear abnormal, but still look like ductal cells. Metaplastic tumors may contain some of these breast cells, but they also contain cells that look like the soft tissue and connective tissue in the breast. It is thought that the ductal cells have undergone a change in form (metaplasia) to become completely different cells.

Case Description

A 71-years-old postmenopausal non-smoker, non-alcoholic female came to us with painless progressive lump in her right breast behind the areola for 5 months. She didn't complain of any discharge from nipple and denied history of Radiotherapy or breast cancer in family. Examination revealed a single hard subareolar lump of size approximately 5cmx6cm with nodular surface and fixity to overlying skin with retracted nipple (Figure 1).

There was no evidence of ipsilateral/contralateral axillary, internal mammary and supraclavicular lymphadenopathy. Prior to visiting us, she had visited somewhere else where few investigations were performed to evaluate the lump. Her mammographic finding showed an irregular margin with speculation. Twice FNAC (Fine Needle Aspiration Cytology) followed by core biopsy had been performed and the reports were consistent with finding of chronic inflammation with no atypical cells. We also repeated core biopsy in our institute and the report was the same as previously. She was admitted and Core wide local excision followed by mammoplasty was performed under general anesthesia. The histopathology report turned out to be metaplastic breast cancer with mesenchymal differentiation (Figure 2).

The immunohistochemistry results were triple-negative. Adjuvant therapy was given and she is on regular follow up till date. Figure 3 shows post-operative remaining right breast with maintained

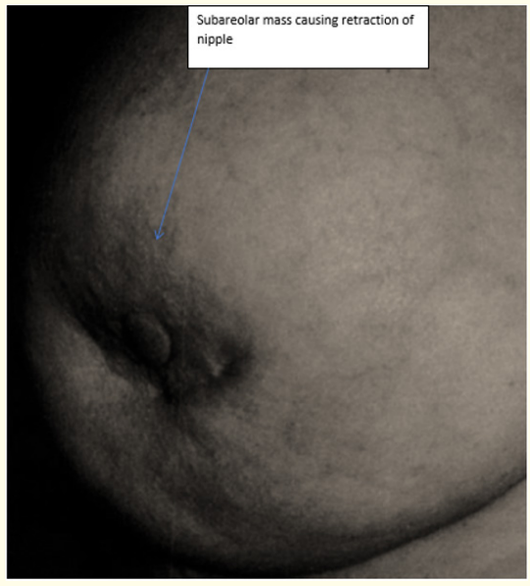

Figure 1: Pre-operative picture showing fullness in superolateral aspect of nipple areola complex of right breast with retracted nipple.

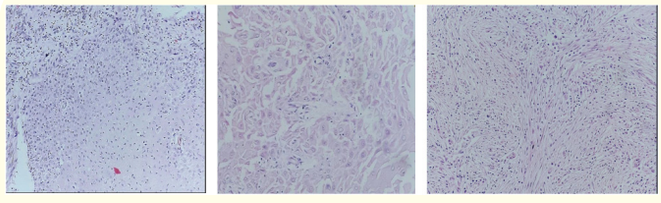

Figure 2: Right- areas of Chondroid and osseous differentiation; Middle- Proliferation of atypical squamoid cells in broad interconnecting trabeculae, nest sheets and in linear cords; Left- surrounding stroma showing proliferation of spindle cells.

contour and healthy scar.

The case report describes its complex structure which has a complex identification in the sample of FNAC and core biopsy.

Discussion

While going through the Literature search in Pubmed database using the word "metaplastic breast cancer", we found only 91 articles were published over the period of last 4 decades (1979-2020). Metaplastic carcinomas of breast (MCB) are a heterogenous group of malignant tumours in which part or all of the carcinomatous epithelium is transforrmed into a nonglandular growth process**.** Its nomenclature is also problematic because different authors have referred to this group of neoplasms using different terms, including carcinosarcoma, sarcomatoid carcinoma, carcinoma with pseudosarcomatous metaplasia, carcinoma with pseudosarcomatous stroma, fusiform carcinoma, myoepithelial carcinoma, etc. [2].

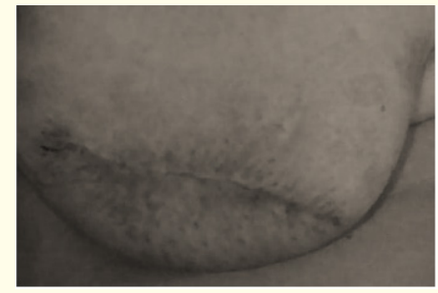

Figure 3: Post-operative day 14 picture of operated breast with maintained contour and healthy scar.

The 2011-WHO Working Group recognizes the following five subtypes: squamous cell carcinoma (SCC), MBC with mesenchymal differentiation, low grade adenosquamous carcinoma, spindle cell carcinoma and fibromatosis-like metaplastic carcinoma [3].

Histologically, Metaplastic breast cancer with mesenchymal differentiation (MCMD) is characterized by a biphasic pattern of malignant epithelial and sarcomatous components without evidence of a transition zone between the two elements [4]. This is in consistence with our case.

Metaplastic breast carcinoma most often affects women over 50 years of age [5]. Accordingly our patient is in her seventies. The most common form of presentation is a palpable mass with rapid growth. Involvement sometimes can reach a size that may lead to ulceration and fixing of the mass to the skin or chest wall [6]. Our patient had rapidly progressing lump in her right breast behind the areola with fixity to overlying skin and retracted nipple.

Neither mammograms nor breast ultrasound provide specific images for metaplastic breast cancer, but they demonstrate that the tumors are usually well circumscribed, generally without associated microcalcifications; sometimes some portion of irregular contour [5]. In our case, the mammogram showed an irregular margin with speculation.

Although fine-needle aspiration cytology(FNAC) and core-needle biopsy (CNB) are commonly used for the diagnosis of breast cancer, not enough studies proving the diagnostic cost-effectiveness of these techniques for the identification of Metaplastic breast cancer with mesenchymal differentiation (MCMD) have been pub-

lished so far [7]. The random distribution and proportion of the mesenchymal differentiation in the tumour and the expertise in performing the technique and in identifying the chondroid component may play an important role in the diagnosis of MCMD. In our case, even repeated FNAC and core biopsy failed to make the proper diagnosis which was made on biopsy of surgically resected specimen only.

As in our case, metaplastic carcinomas are triple negative in 90% of cases [8]. This is because they are often associated with poorly differentiated carcinomatous elements [6].

As in our case, Axillary lymph node involvement is usually not seen. However, there is a tendency to pulmonary metastases; so the tumor/node/metastasis (TNM) staging system is of little use [9].

Treatment for metaplastic breast carcinoma is relatively unknown because of the rarity of the disease, but studies suggest that removal of the tumor and adjuvant radiation therapy has the greatest benefit. There has a tendency to treat these tumors as high-risk cancers, regardless of whether or not they present with axillary involvement [10].

Conclusion

Unlike other common breast cancer, metapalstic breast cancer with mesenchymal differentiation (MCMD) is hard to identify by FNAC and Core Biopsy. Its diagnosis is often made on biopsy of surgically excised specimen.

Bibliography

1. Barnes PJ., *et al*. "Metaplastic breast arcinoma:clinical-pathologic characteristics and HER2/nue expression". *Breast Cancer Research and Treatment* 91 (2005): 173-178.

2. World Health Organization (WHO): WHO Classification of Tumors of the Breast, ed 4. Geneva, WHO (2012).

3. El Zein D., *et al*. "Metaplastic Carcinoma of the Breast Is More Aggressive Than Triple-negative Breast Cancer: A Study From a Single Institution and Review of Literature". *Clinical Breast Cancer* 17.5 (2017): 382-391.

4. Salemis NS. "Metaplastic carcinoma of the breast with mesenchymal differentiation (carcinosarcoma). A unique presentation of an aggressive malignancy and literature review". *Breast Disease* 37.3 (2018): 169-175.

5. Patterson SK., *et al*. "Metaplastic carcinoma of the breast: mammographic appearance with pathologic correlation". *AJR American Journal of Roentgenology* 169 (1997): 709-712.

6. Wagotz ES., *et al*. "Metaplastic carcinoma of the breast II. Spindle cell carcinoma". *Human Pathology* 20 (1989): 732-740.

7. Soler Monsó MT., *et al*. "Metaplastic carcinoma of the breast with chondroid differentiation (matrix-producing carcinoma): study of the diagnostic cost-effectiveness of fine-needle aspiration biopsy and needle core biopsy". *Acta Cytology* 58.1 (2014): 9-14.

8. Rayson D., *et al*. "Metaplastic breast cancer: prognosis and response to systemic therapy". *Annals of Oncology* 10 (1999): 413-419.

9. Kurian KM and Al-Natussi A. "Sarcomatoid/metaplastic carcinoma of the breast: a clinicopathological study of 12 cases". *Histopathology* 40 (2002): 58-64.

10. Goldhirsch A., *et al*. "Meeting Highlights: International Consensus Panel on the Treatment of Primary Breast Cancer". *Journal of Clinical Oncology* 19 (2001): 3817-3827.