

A CASE REPORT OF METAPLASTIC CARCINOMA OF BREAST

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Abstract - Metaplastic carcinoma is a rare form of breast cancer and is a generic term for breast carcinoma of ductal type in which the predominant component of the neoplasm has an appearance other than epithelial glandular structures.

We report a case of this rare tumor in a 57-year-old post-menopausal woman.

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INTRODUCTION

Metaplastic carcinoma consists of a highly heterogeneous group of neoplasms characterized by an admixture of adenocarcinoma with areas of spindle, squamous, osseous or chondroid differentiation (1). The common denominator of this tumor is the presence of an epithelial or mesenchymal cell population and often in addition to an adenocarcinoma within the mammary neoplasm (1,2,3).

The metaplastic component may appear benign or malignant.

The degree of differentiation as well as the proportion of the various elements within the tumor are highly variable (3,4,5).

CASE REPORT

A 57-year-old post-menopausal woman came to surgical clinic because of a painless mass in her right breast. She had noticed it 2 months ago, which was gradually enlarged in size.

In physical examination, a firm mass fixed to the skin in upper outer quadrant of right breast with nipple retraction and right axillary lymphadenopathy was found.

There was no ulceration, nipple discharge or overlying skin discoloration.

Her prior clinical record was unremarkable except for hypertension and there was no familial history of breast carcinoma.

She had nine children and her first pregnancy was 40 years ago when she was 17-year-old. In mammography, a well-circumscribed mass with calcification was observed.

Because of clinical and mammography findings, patient was scheduled for surgery with frozen section

examination.

In first step, histopathologic examination of frozen sections was reported as malignant, and modified radical mastectomy was performed for the patient.

GROSS FINDINGS

In mammary parenchyma, there was a nodular mass with maximal diameter of 5 cm. Its cut surface was white to gray with firm to hard osseous consistency and central necrosis with cystic degeneration (Fig 1).

MICROSCOPIC FINDINGS

Microscopically the neoplasm had partially circumscribed border with foci of infiltrating adjoining breast tissue. The neoplasm was composed of high-grade ductal carcinoma with foci of squamous metaplasia, and in the matrix atypical cartilaginous and osseous components were seen (Fig. 2).

In some parts intervening spindle cells were observed. In mastectomy material, there was no tumoral residue, but axillary lymph nodes showed metastatic ductal carcinoma (Fig. 3).

DISCUSSION

An unusual ossified mammary tumor described by Bonet in 1700 is often cited as the earliest record example of metaplastic carcinoma (1).

In contrast to the common occurrence of cartilage and bone in the mammary cancer of cats and dogs, cartilage and bone formation are relatively rare in human mammary carcinoma. This has led to considerable speculation regarding the origin of these tumors (1,5).

Although it is easy to accept the presence of squamous metaplasia within breast carcinoma, acceptance of metaplasia and transformation of epithelial cells to mesenchymal cell population is more difficult. But immunohistochemical and ultrastructural studies reveal that the myoepithelial cell population in the breast is a hybrid cell with partial epithelial and mesenchymal features; because of this matter the myoepithelial cells seem to be good indices as a stem cell that could differentiate completely toward both epithelial and mesenchymal cell lines within this neoplasm (1,6).

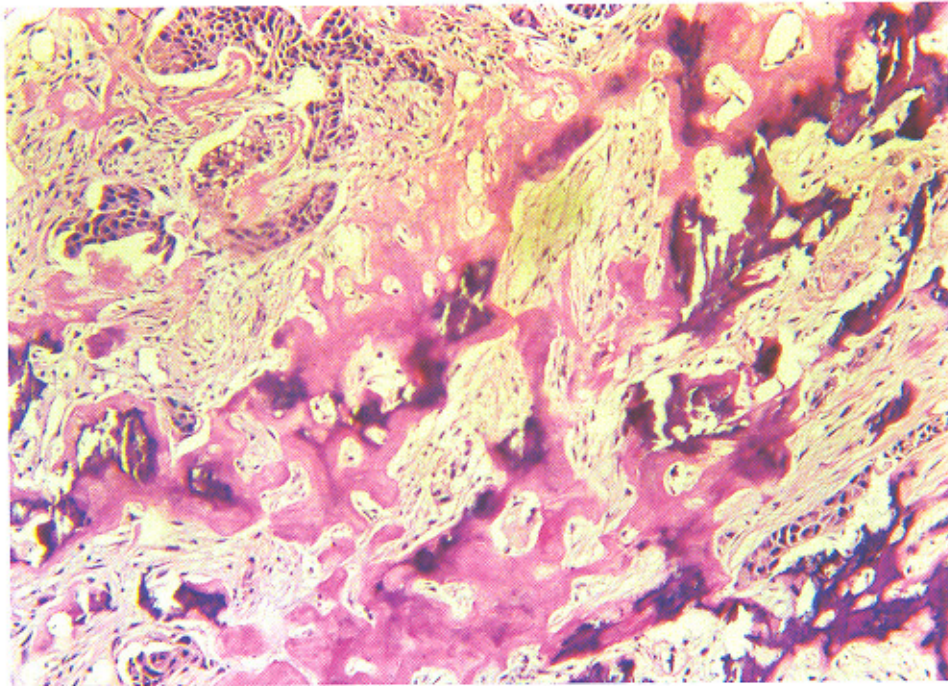


Fig. 1. Infiltrating ductal carcinoma with osseous differentiation $\times 100$

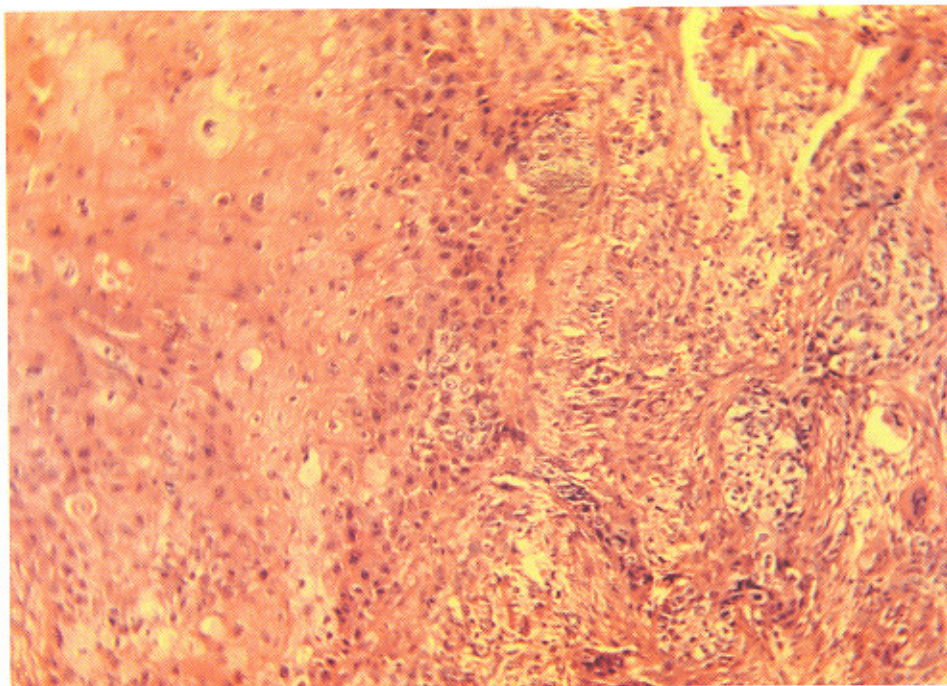


Fig. 2. Infiltrating ductal carcinoma with squamous metaplasia $\times 400$

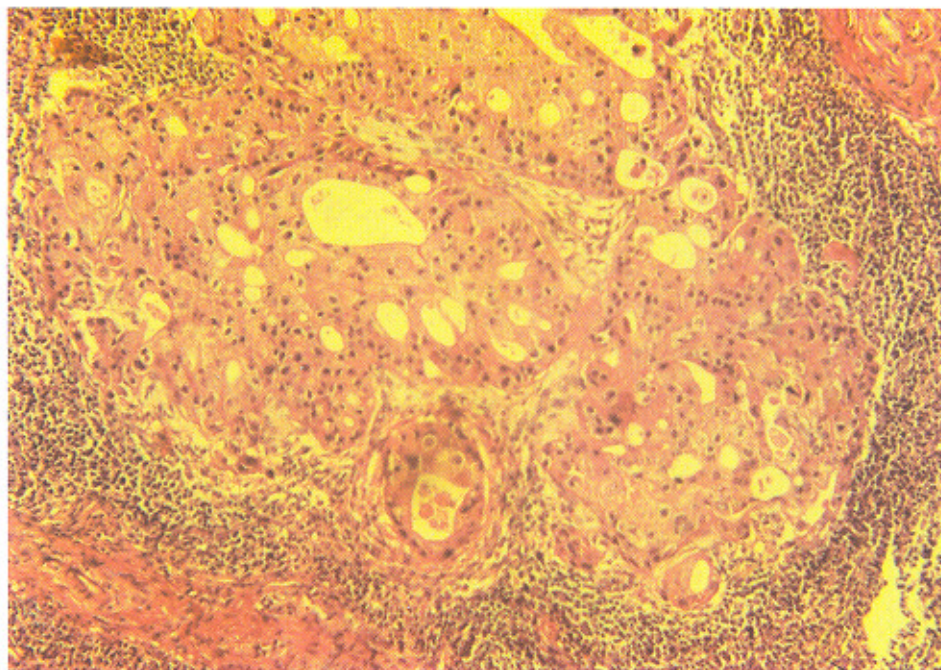


Fig. 3. Axillary lymph node with metastasis of ductal carcinoma × 400

As mentioned before metaplastic carcinoma of human mammary gland comprises a heterogeneous group of neoplasms. To reduce the heterogeneity clearly evident and to obtain more reliable information concerning the prognosis and response to therapy, classification of these tumors based on the microscopic appearance of the lesion at the time of presentation is proposed (Table 1) (1).

Table 1. Classification of metaplastic carcinoma

Squamous Carcinoma
Large cell (keratinizing or non keratinizing) squamous carcinoma with spindle cell metaplasia
Adenosquamous Carcinoma
High grade
Low grade (including syringomatous variant)
Adenocarcinoma with spindle cell metaplasia
Carcinoma with chondroid differentiation
Carcinoma with osseous differentiation

This tumor is observed most often in 5th and 6th decades (4,8). All cases have been reported in women (1). The most frequent clinical presentation is a single palpable firm mass, and in the majority of case-reports the prevalent anatomic site is upper outer quadrant of right breast. The neoplasm usually presents in 1 week to 2 years but most present in 1 to 4 months (8).

The mammographic features of metaplastic carcinoma have been described in a small number of

cases and ranges from well circumscribed to speculated masses (4,5).

This neoplasma is high grade malignant tumor that metastasizes to axillary lymph nodes as carcinoma, but metastasizes to other organs as carcinoma or sarcoma (8). On the whole this neoplasm is mostly ER-PR receptor-negative (8) and its behavior seems to be more aggressive than that of ordinary invasive ductal carcinoma (2,8).

REFERENCES

1. Tavassoli F. Pathology of breast. 2th edition. McGraw-Hill publication; 481-510; 1999.
2. Ackermans R.J. Surgical Pathology. 8th edition. Mosby publication; Vol 2: 1615-16; 1996.
3. G. Silverberg SG. Principles and practice of surgical pathology. 3th edition. Churchill livingstone publication; Vol 1: 642-45; 1996.
4. Wargotz ES and Norris JH. Mammary matrix producing carcinoma. Human pathology. 20(7). 628-35; 1989.
5. Herrington CS, Tarind HCS. Osteosarcomatous differentiation in carcinoma of breast: A case report. Histopathology. 24: 282-285; 1994.

6. Cranor CC and Lesser CML. Metaplastic carcinoma of breast with osteocartilaginous heterologous elements. Am. J. Surg. Pathol. 22:188-194; 1998.

7. Sarcomatoid FG. Carcinoma of breast pathology of four cases. Breast Dis. 283-294; 1995.

8. Wargotz ES and Norris HJ. Metaplastic carcinoma of breast. Cancer. 64: 1490-96; 1989.