

Breast Carcinoma with Choriocarcinomatous Differentiation; a Rare Case

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Abstract

Objectives: Breast carcinoma with choriocarcinomatous differentiation is a rare entity, generally presenting with high-grade disease and an aggressive clinical course with overall survival of less than a year

Case: A 69-year-old woman with a diagnosis of pT1N0M0 invasive ductal carcinoma with choriocarcinomatous differentiation received six cycles of adjuvant chemotherapy and is still disease free on the 23rd month after diagnosis, showing a better prognosis than most other cases reported in the literature.

Conclusion: The reason for the poor prognosis for this type of breast carcinoma remains unclear. Standard chemotherapeutic agents administered for breast carcinoma may be used for choriocarcinomatous differentiation.

Keywords: Breast carcinoma, choriocarcinomatous differentiation, chemotherapy

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Background

Choriocarcinomatous differentiation has been described previously in tumours of the bladder, oesophagus and colon,¹⁻³ but it is quite rare in breast carcinomas. Breast carcinoma with choriocarcinomatous features was first described by Saigo and Rosen in 1981⁴. They described a 55-year-old patient with a breast tumour that contained mono- and multinucleated giant cells strongly resembling a choriocarcinoma of gestational trophoblastic origin. A limited number of such cases have been reported. Most of them presented with high-grade disease, exhibiting an aggressive clinical course with an overall survival of less than a year^{5,6}. However, in two cases, 2 and 4 years of disease-free survival were reported⁷. We report an additional case of breast carcinoma with choriocarcinomatous features and a brief review of the literature.

Case

A 69-year-old woman presented with a left breast mass. The initial mammogram showed a left breast lesion of 21×17 mm with irregular borders. The patient underwent a modified left radical mastectomy with axillary dissection. Microscopically, the 2×1.5 cm tumour mass consisted of solid nests and anastomosing cords of tumour cells separated by sparse cellular desmoplastic stroma, suggestive of invasive ductal carcinoma. Most, if not all, of the tumour consisted of choriocarcinomatous differentiation areas composed of groups of a few mono- and multinucleated syncytiotrophoblast-like giant cells, which looked like choriocarcinoma cells.

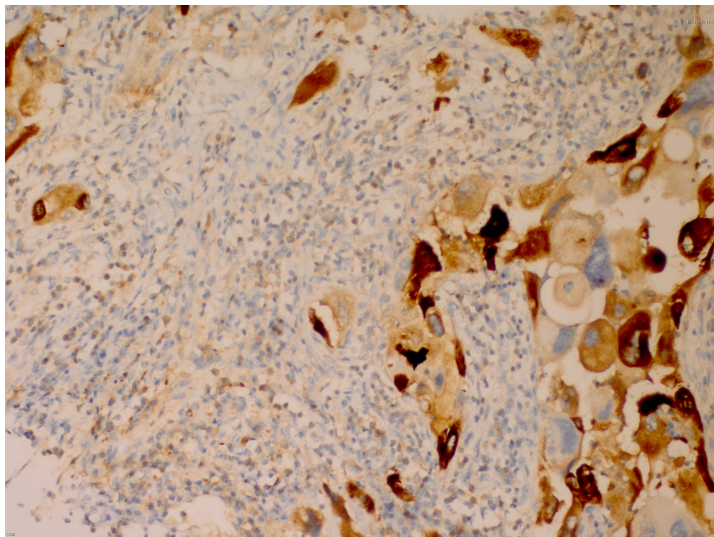


Fig 1: Immunohistochemical staining with hCG in the cells

No intraductal carcinoma and no lymphovascular invasion were detected, whereas perineural invasion was present. Immunohistochemically, the choriocarcinomatous differentiation areas stained positively for human chorionic gonadotropin (hCG) (Fig. 1) and placental alkaline phosphatase (PLAP), while the tumour stained negative for ER, PR and cerbB2. The 14 lymph nodes extracted from the specimen were negative for carcinoma infiltration.

Imaging results were negative for systemic metastases. The diagnosis was pT1N0M0 invasive ductal carcinoma with choriocarcinomatous differentiation.

Adjuvant chemotherapy, the same as that used for the equivalent stage of breast carcinoma,

consisting of 6 cycles of CAF (cyclophosphamide 500 mg, doxorubicin 50 mg, 5-FU 500 mg per square metre of body surface area) was administered.

Twenty-three months after diagnosis, the patient is still disease free.

Conclusion

Breast carcinoma with choriocarcinomatous features is a rare variant of breast malignancy, usually assumed to have a poor prognosis and poor response to treatment. However, it is difficult to assess the efficacy of treatment for this condition because of its rarity and occasional reports of good outcomes.

These tumours are composed of atypical malignant cells, similar to choriocarcinoma cells, that can express hCG and human placental lactogen markers⁸. In some cases, isolated carcinoma cells that are reactive immunohistochemically for hCG can be found in 5–21% of common invasive ductal carcinoma of the breast without choriocarcinomatous features. It has been shown that the presence of such non-choriocarcinomatous cells reactive for hCG does not carry any prognostic significance and clinical importance⁹.

Another differential diagnosis is with carcinoma metastatic to the breast. This is also a rare event and most cases have a history of hydatiform mole or choriocarcinoma^{10,11}. In breast carcinoma with choriocarcinomatous differentiation, there is usually a negative history for gynaecologic malignancies, and invasive or *in situ* ductal areas are important markers for diagnosis. In this case, there were areas of choriocarcinomatous differentiation intermingled with invasive ductal carcinoma.

There are limited numbers of these cases in the literature and most patients were reported to be peri- or postmenopausal, as was our patient^{6,7}. However, three cases in their 30s and one in the fifth week of pregnancy have also been reported^{5,12,13}. In the literature, a right breast predilection was reported. However, in our case the tumour was located in the left breast^{12,14}. In two cases, only positivity for ER and/or PR staining were reported, although these were negative in our case^{7,15}. All but one case was shown to have invasive ductal carcinoma accompanying a choriocarcinomatous pattern, as in our patient. Green reported a case with primary colloid carcinoma showing focal choriocarcinomatous features¹⁶.

This case was diagnosed at an earlier stage and has had a longer disease-free survival than most cases reported in the literature. The recommended treatment for this type of breast carcinoma is surgical resection, the same as in conventional breast carcinoma with the same stage at diagnosis. There is no established chemotherapy regimen. We chose a chemotherapy regimen commonly used in the same stage of breast carcinoma. Generally, patients have been reported to present with locally advanced stage and lymph node and distant metastases. Most died within 1 year of

diagnosis^{4,5,12}. However, Erhan et al. reported two of four cases of breast carcinoma with choriocarcinomatous features had a disease-free survival of 2 and 4 years⁷. Resetkova et al. reported two cases; one of them (a 38-year-old woman in her fifth week of pregnancy) was disease free after one year¹². Clearly, more reports from other clinicians who have managed this rare tumour subtype are needed in order to establish its optimal treatment.

Learning Points:

1. Breast carcinoma with choriocarcinomatous differentiation is a rare entity.
2. An uncommonly long disease-free survival has been observed in this case.
3. To our knowledge, this is the first report of a specific chemotherapy regimen for this rare subtype.

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