CASE REPORT

Adrenal cortical carcinoma metastatic to the breast

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A 56 year old woman was diagnosed with adrenal cortical carcinoma in May 2003, for which she underwent left radical adrenalectomy. Eight months later, in January 2004, she presented with a solitary, well delineated, left breast mass with central pleomorphic calcifications on mammographic examination. A diagnosis of metastatic adrenal cortical carcinoma was made on core biopsy. Subsequently, the patient underwent a lumpectomy of the mass, which confirmed the diagnosis. To our knowledge, this is the first case report of adrenal cortical carcinoma metastatic to the breast.

This is a brief report of a case of a 56 year old woman who was diagnosed having adrenal cortical carcinoma in May 2003. At that time, the patient underwent left radical adrenalectomy. Eight months later, in January 2004, the patient presented with a solitary, well delineated, left breast mass with central pleomorphic calcifications on mammographic examination. Ultrasonography demonstrated a 16×15×9 mm hypoechoic lesion with central vascularisation. Multiple core biopsies were obtained. Subsequently, the patient underwent a lumpectomy of the area with the mass.

PATHOLOGICAL FINDINGS

Histologically, left breast mass showed high grade malignant neoplasm, that measured 19×17×12 mm, and was composed of sheets and nests of highly pleomorphic cells with abundant eosinophilic cytoplasm, morphologically similar to the previously excised adrenal cortical carcinoma. Immunostaining for inhibin and Melan (A103) were positive, and stains for keratin, oestrogen and progesterone receptors, and gross cystic disease fluid protein-15 were negative. A diagnosis of metastatic adrenal cortical carcinoma (ACC) was made (fig 1A, B).

DISCUSSION

We report the first case, to our knowledge, of ACC metastatic to the breast. ACC itself is a very rare tumour, with an incidence of 0.5–2 per million.¹ In addition, the breast is an unusual site for metastatic tumours.² In large studies, metastatic tumours constitute 0.4–2% of all breast malignancies.³ In a patient with carcinoma metastatic to the breast, the commonest sites for the primary tumours are (in order of frequency): breast carcinoma of the contralateral breast, melanoma, lymphoma, carcinoid tumour, and carcinomas of the ovary and lung.⁴ In men, carcinoma of the prostate gland commonly metastasises to breast and nipple.⁵ In children, rhabdomyosarcoma is the tumour most commonly associated with breast metastases.⁶ More than 90% of patients presenting with metastases to the breast have a known diagnosis of primary malignancy,⁷ with the common exception of small cell carcinoma, which usually presents with metastases from an occult primary tumour in the lungs.⁸

Most metastases to the breast present as rapidly growing, mobile, well circumscribed palpable masses, and usually have no underlying skin changes.² When dealing with such lesions in the breast, review and comparison of all prior pathological material is crucial in order not to overlook the possibility of metastatic lesion. Special stains can help to confirm the diagnosis. The distinction between a primary breast tumour and a metastasis is critical for the patient management, as metastatic disease frequently signifies poor prognosis and surgical excision is not indicated.

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Figure 1 (A) Adrenal tumour; (B) metastatic breast tumour (haematoxylin and eosin, original magnification ×200).

Abbreviation: ACC, adrenal cortical carcinoma

Take home messages

- A 56 year old female patient was diagnosed with adrenal cortical carcinoma. Eight months later, she presented with a left breast mass with central pleomorphic calcifications on mammographic examination, which was diagnosed as metastatic adrenal cortical carcinoma.
- This is the first case report of adrenal cortical carcinoma metastatic to the breast. Although metastatic lesions are extremely rare in the breast, the possibility of such lesions should not be overlooked.

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