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Case Report

Breast metastasis from ovarian cancer: A case report

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ABSTRACT

Breast metastasis from ovarian cancer is a rare event, with vary clinical and imaging presentations, depends on the form of dissemination of the disease and may mimic primary benign and malignant lesions.Confirmation of the diagnosis is of pivotal importance to choice an adequate therapeutic planning, allowing to avoid unnecessary surgeries and to provide appropriate systemic therapy. In this manuscript, we present a case of breast metastasis from ovarian cancer. The patient presented to our Institute with a localized, palpable mass in the upper outer quadrant of the right breast. Mammography and breast sonography showed a singular, round, and homogenous mass with regular borders. No suspicious axillary node was observed. Lesion biopsy revealed the presence of epithelial malignant tumor cells, compatible with a tube-ovarian serous histotype. So, although it could be rare, secondary malignant neoplasm should be considered in the differential diagnosis of breast lesions in patients with a personal history of ovarian cancer.

Introduction

Intramammary metastases from solid neoplasms are rare, accounting about 0.33%-6.3% of breasts malignancies, and arise most frequently from melanomas, sarcomas, lung cancer ovarian tumors, and renal carcinomas [1,2].

Unfortunately imaging findings are not specific and diagnostic to differentiate primary or secondary etiology and no features are characteristic of different metastasis.

The 2 main radiological patterns observed in breast metastases are masses and architectural distortion. Generally, the masses are noncalcified even if sometimes metastases from ovary could contain microcalcification due to the presence of psammoma bodies [3,4]. On ultrasound intramammary metastases could be hypoechoic or isoechoic with well circumscribed margins and they could also exhibit posterior enhancement. Radiological features could vary considering different primary malignancies, even if, up to now, it was not well examined whether some entities are more likely to cause some pattern [2].

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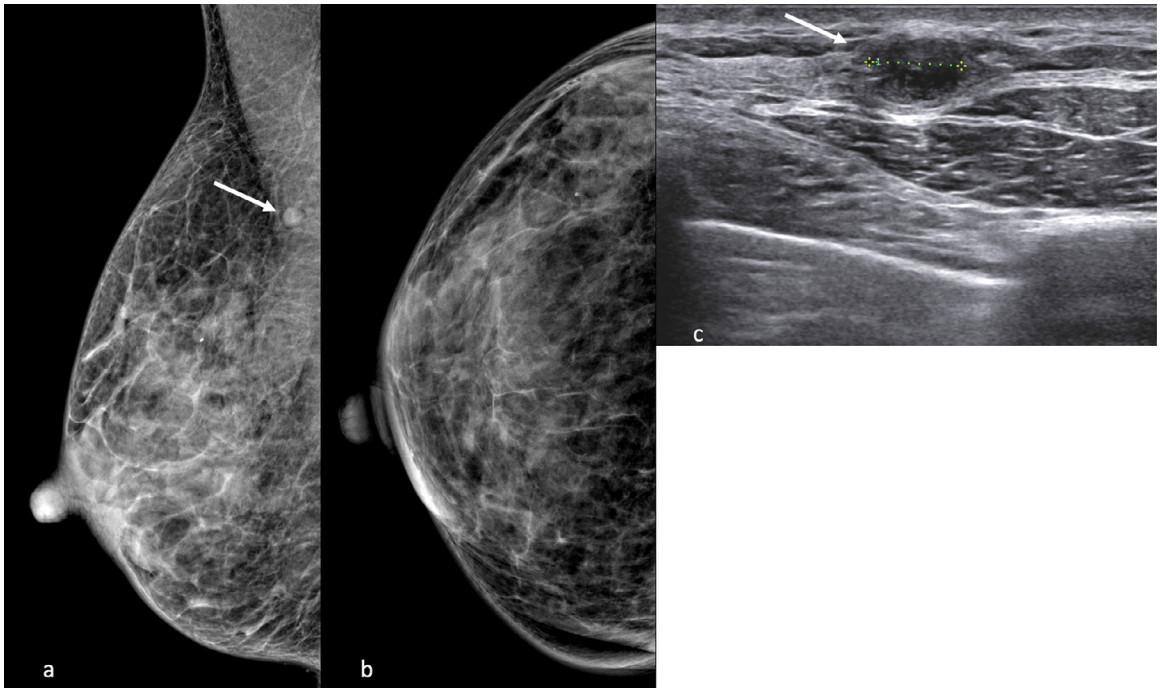

Fig. 1 – Medio-lateral oblique (a) and craniocaudal (b) mammogramms show an oval circumscribed dense mass in the upper-outer quadrant of the right breast (arrow). On ultrasound (c) the mass is hypointense and show circumscribed margins and posterior enhancement.

The diagnosis of breast metastases and the differentiation from primary mammary malignancy is of pivotal importance for patient management, allowing in some instances to avoid unnecessary surgery and to tailor systemic therapy [1]. Prognosis is generally poor, because most patients have concomitant disseminated disease [5].

In the present report, we describe a woman with breast metastases from ovarian cancer and we discuss the main findings of breast metastases in the different imaging methods.

Case report

A 54-year-old woman, who was diagnosed an ovarian high-grade serous adenocarcinoma FIGO IIIC in June 2015, presented to our Institute in January 2018 with a localized, palpable, painful, and mobile mass in the upper outer quadrant of the right breast. The patient had family history of breast cancer (maternal grandmother) and she had BRCA tests with the result of a variant of uncertain significance result.

Breast ultrasound and mammography revealed a singular, round, and homogenous nodule with well-defined border without calcifications in the upper outer quadrant of the right breast (Fig. 1). No suspicious axillary lymph nodes were observed. The lesion was 0.5 cm in size. Fine-needle aspiration with a 22 gauge needle was performed revealing the presence of epithelial malignant tumor cells, consistent with a tube-ovarian serous histotype (Fig. 2). Cytological examination was performed, instead of the core biopsy that is the standard of care, to quickly diagnose and perform timely therapy. Then the patient did not undergo surgery and she started ovarian cancer-specific chemotherapy.

Discussion

Breast cancer is 1 of the most common primary malignancies in women, yet metastatic tumor to the breast are infrequent with an overall incidence of primary ginecologic cancer of 0.17%, with 0.07% of metastatic disease originating from primary ovarian tumor [6]. Serous papillary carcinoma is the most common type of ovarian tumor that can metastatize to the breast [7] and is usually detected within 2 years from the initial diagnosis of primary ovarian cancer. In our case, breast metastases occurred after slightly more than 2 years from the diagnosis of primary ovarian carcinoma.

Because of the lack of specific clinical or radiological signs for breast metastases diagnosis, a multiple disciplinary approach is needed to differentiate these lesions from primary breast carcinoma or from benign breast lesions [5].

An accurate clinical history is crucial considering the simultaneous or previous diagnosis of extramammary malignancy, combined with a careful clinical examination, a radiological, and anatomopathological evaluation, to ensure the correct diagnosis and the most appropriate management of these patients [1,5].

Metastatic lesion presentation in the breast depends on routes of cancer dissemination, hematogenous or lymphatic.