

## Case Report

# Contralateral Axillary Metastasis in Breast Carcinoma: Case Report and Review of Literature

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### ABSTRACT

The clinical dilemma of management of isolated contralateral axillary metastasis (CAM) in carcinoma breast remains unsolved. We report a case of metachronous contralateral left axillary metastasis in a 54-year-old postmenopausal woman, its management, and review of literature. After ruling out distant metastasis and occult primary in the opposite breast, curative treatment was planned. She underwent left axillary lymph node dissection which on histopathology showed metastatic carcinoma. Management of CAM with curative or palliative intent and whether to consider them as locoregional or distant metastasis remains controversial. CAM may occur due to the locoregional spread of disease, and hence, curative intent of treatment should be offered to these patients.

**KEYWORDS:** Carcinoma breast, contralateral axillary metastasis, lymph node metastasis, recurrent

## INTRODUCTION

Metachronous contralateral axillary metastasis (CAM) is uncommon in carcinoma breast. The incidence varies from 1.9% to 6% but still more common than lymph nodal metastasis from occult breast primary (0.3%–1%).<sup>[1]</sup> The American Joint Committee on Cancer staging manual stages CAM as metastatic (M1) disease.<sup>[2]</sup> A review of literature suggests that patients with isolated CAM have better survival than patients than distant metastasis.<sup>[3]</sup> In patients who have received previous treatment, isolated CAM may represent the locoregional spread of the disease than distant metastasis.<sup>[4]</sup> The presence of other metastasis may suggest that the lymph nodal metastasis has occurred due to hematogenous dissemination and that the nodal manifestation is part of systemic disease.<sup>[3]</sup> It is important to stage the disease accurately as the intent changes from curative to palliative and also the modalities of treatment.

The management of CAM poses significant diagnostic and therapeutic challenges. Prior to treatment, we have to establish that the recurrence is localized to the contralateral axilla, rule out occult primary from the opposite breast and that the metastatic disease has not arisen from extramammary primary. It may be

hypothesized that prior treatment by radiotherapy or surgery alters the native lymphatic pathways in the ipsilateral breast and may lead to crossover metastasis in the opposite axilla. This may occur by means of deep fascial chest wall lymphatic plexi, dermal lymphatics, or alternate pathways. The discordance rate between primary breast tumor and metastatic disease varies between 16.4% and 41.7% in terms of estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (HER-2) expression.<sup>[5]</sup> Hence, isolated recurrent CAM cannot be confirmed by either radiologic imaging or histopathological examination and is a diagnosis of exclusion.

## CASE REPORT

A 54-year-old postmenopausal woman, a known case of carcinoma right breast, presented to our breast and thorax outpatient department for left axillary lymphadenopathy. She was previously treated for carcinoma right breast before 18 months. There was no significant medical

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history for other comorbidities or family history of carcinoma breast. She underwent lumpectomy with right axillary lymph node dissection (ALND). The histopathological report was suggestive of Grade III triple-negative (ER, PR, and HER-2 negative) infiltrating ductal cell carcinoma, not otherwise specified type, a 2.5 cm × 2.0 cm × 1.2 cm tumor with negative margins. There was perineural and lymphovascular invasion and metastasis to one axillary lymph node. After completion of eight cycles of chemotherapy, she was referred for radiotherapy. The patient was on regular follow-up and disease-free for 18 months. She was referred to the breast surgical oncology department for contralateral axillary lymphadenopathy.

On clinical examination, there was no evidence of recurrent lesion at neither the surgical site nor a lump in the opposite breast. The rest of general physical examination was found to be normal. Sonomammography showed an enlarged left axillary pathological lymph node which was 7 mm × 19 mm sized with distorted fatty hilum. Ultrasound-guided fine-needle aspiration cytology of the node showed metastatic carcinoma. On mammosonography, magnetic resonance imaging (MRI) of the breast, and positron-emission tomography-computed tomography (PET CT), there was neither primary lesion in the left breast, recurrent lesion in the right breast, nor other distal metastasis. A left-sided ALND done was done and one out of dissected 13 nodes was positive for metastatic triple-negative ductal carcinoma (ER, PR, and HER-2) with perinodal extension.

## DISCUSSION

The management of a carcinoma breast patient with metachronous CAM is controversial and the dilemma remains unsolved. It poses multiple questions to the treating physician who needs to be answered before treating such a patient. What is the mode of spread of malignancy to opposite axilla, hematogenous, or lymphatic? Whether the CAM has occurred as part of systemic disease or is it presentation of localized disease? Whether CAM can be considered a locoregional disease in absence of other distal metastasis? What is the intent of treatment of such a patient, curative or palliative? If managed with a curative intent, will they have better survival than patients with other systemic metastasis? We present a review of literature and possible evidence for answering these questions which may help in management of this subset of patients.

The mechanism and plausible pathway for CAM is explained below:

The lymphatic spread of breast to nodal basins has been evaluated by multiple lymphoscintigraphic studies.<sup>[4]</sup>

Native lymphatic pathways can be disrupted with prior surgical intervention or radiotherapy, which are common modalities in breast cancer treatment.<sup>[4]</sup> The crossover of lymph may occur via dermal or deep chest wall lymphatic plexi.<sup>[6]</sup>

Pasta *et al.* reported an incidence of 2.8% (2 of 70 cases) of sentinel lymph node (SLN) in the contralateral axilla, both patients received prior treatment and had recurrent lesions.<sup>[7]</sup> Tokmak *et al.* reported an incidence of 42.8% (3 of 7 cases or recurrent cancer patients) of alternate lymphatic pathways, two of them had a SLN in opposite axilla, one of which was positive for micrometastasis.<sup>[8]</sup> Perre *et al.* evaluated and found crossover of lymphatic drainage to opposite axilla in six patients (of 23 patients) following radiotherapy or surgical intervention by axillary dissection.<sup>[4]</sup> Ahmed *et al.* in a meta-analysis reported a 25% aberrant sentinel identification rate on lymphoscintigraphy and 40% of metastatic lymph nodes were found to be aberrant in recurrent carcinoma breast patients and inferred that CAM occurs as a result of aberrant lymphatic drainage, as prior surgery disrupts lymphatic channels, especially in patients who have undergone prior ALND.<sup>[9]</sup> The contralateral metastasis can also occur in supraclavicular or internal mammary nodal chain. Aukema *et al.* reported CAM in two patients (out of 60 patients) by PET CT.<sup>[10]</sup> Sanz-Viedma *et al.* reported a case of CAM in a 50-year-old recurrent carcinoma breast patient detected by single-photon emission computed tomography/CT.<sup>[11]</sup> Iris M. C. van der Ploeg *et al.* found contralateral axillary drainage in four patients (of 115 patients) by lymphoscintigraphy in previously treated carcinoma breast patients.<sup>[12]</sup>

There are no clear guidelines for management of patients with isolated metachronous CAM. The evidence for management is based on prior published case reports and case series which are few in number. The diagnostic workup is resource intensive to rule out systemic metastasis and occult primary of the opposite breast. Core biopsy of the lymph node for histopathological examination and Immunohistochemistry may help to identify the probable site of primary. The imaging modalities may include MRI and PET CT to exclude occult primary in the opposite breast and systemic metastasis.

The treatment of patients with isolated CAM is ALND which may add-on and prolongs the disease-free survival (DFS) of these patients followed by systemic therapy and radiotherapy. Dayyat *et al.* reported a case of metachronous CAM in a 63-year-old woman who was initially managed as Stage IV disease but later treated with ALND and chemoradiation with a DFS of 14 months. They hypothesized that after ALND, radiation may provide

local control by acting on occult primary (if present) as well as microscopic tumor cells in lymphatics.<sup>[3]</sup> Wang *et al.* reported a median age of 47 years and reported a progression-free survival of 10 months in 28 CAM patients and advocated that radiation provided locoregional control of disease.<sup>[13]</sup> Sabaté *et al.* reported a case of recurrent carcinoma breast with CAM which was confirmed by SLN Biopsy and treated with ipsilateral mastectomy and contralateral ALND.<sup>[14]</sup> Gingerich *et al.* reported lobular breast carcinoma with CAM in a 81-year-old patient, treated with ipsilateral mastectomy and contralateral ALND, adjuvant chemoradiation, and a DFS of 18 months. They concluded that CAM should be treated with a curative intent.<sup>[15]</sup> Huston *et al.* reported seven cases of metachronous CAM patients, five of them treated with ALND and none had local recurrence. They concluded that surgical treatment provides local control and improves relapse-free survival.<sup>[6]</sup>

## CONCLUSIONS

Carcinoma breast patients with isolated metachronous CAM are a unique subset of patients and need individualized management. Prior treatment with surgery or radiotherapy alters the native lymphatic pathways. In absence of other distant metastasis, they may be offered curative treatment. There is a need for a review of staging of these patients with long-term prospective studies for survival analysis.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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