

Synchronous contralateral axillary lymph node metastasis in a recurrent breast cancer following previous axillary clearance

Ian Y Goh , Emilia L Dauway

Department of Surgery,
Hervey Bay Hospital, Pialba,
Queensland, Australia

Correspondence to

Dr Ian Y Goh;
ian.goh@uqconnect.edu.au

Accepted 19 March 2022

SUMMARY

Ipsilateral axillary lymph node metastasis is common, while contralateral axillary lymph node metastasis (CAM) is uncommon. This report is of a patient that presented with a recurrence of left breast cancer and synchronous CAM, with a distant history of left breast conserving surgery and axillary dissection for invasive carcinoma. The CAM was confirmed following a non-routine lymphoscintigraphy and sentinel lymph node biopsy. This highlights the possibility of CAM representing as locoregional disease rather than advanced stage IV disease.

BACKGROUND

In women, breast cancer is the most commonly diagnosed malignancy and the leading cause of cancer death.¹ sentinel lymph node biopsy (SLNB) is the standard of care for lymph node staging in patients with invasive breast carcinoma.^{2,3} In patients with previous breast conserving surgery and axillary lymph node surgery, SLNB often is considered for recurrence, however, this is not considered standard of care for patients with a prior complete axillary lymph node dissection (ALND).

It is common for patients to develop collateral lymphatic flow after axillary nodal surgery. Therefore, in the case of a breast cancer recurrence, further nodal evaluation may provide greater accuracy in staging and prognosis. We present a case of a synchronous contralateral axillary metastasis in a patient with recurrent left-sided breast cancer having had previous breast conserving surgery and axillary clearance. This has implications on staging and prognostication of recurrent breast cancer.

CASE PRESENTATION

A 62-year-old woman presented to our institution with a non-palpable left breast lesion noted on both ultrasonography and mammography during her regular breast screen, measuring 17 mm in size sonographically at the upper outer quadrant. The patient had clinically negative axillary nodes. A core biopsy showed invasive lobular carcinoma (ILC).

The patient had a history of breast cancer on the same (left) side, treated in a different institution 11 years previously, with a left breast wide local excision and ALND and subsequent adjuvant chemoradiotherapy. The histopathology of that cancer was a 12 mm grade 3 mixed ILC and ductal carcinoma in situ (DCIS) and with two out of two sentinel nodes positive. The tumour biology was ER positive, PR

positive and HER-2 negative. Following discussion in the institution's multidisciplinary team (MDT) meeting, the recommendation was for axillary dissection and subsequent adjuvant therapy. The axillary dissection was negative for further metastases. The patient had an unremarkable 5-year surveillance following her adjuvant treatment with anastrozole and was discharged from their follow-up service.

The patient had a medical history for type 2 diabetes mellitus, hypertension, obesity, gastro-oesophageal reflux disease and back pain.

The patient was scheduled for a left mastectomy and, incidentally, a SLNB with a preoperative lymphoscintigraphy having been arranged. On the day of the procedure, it was acknowledged that performing a SLNB was not in keeping with usual standards; however, as the lymphoscintigraphy had showed uptake of the radiotracer in the contralateral (right) side (figures 1 and 2), the decision was made to proceed with a SLNB on the contralateral right axilla after consultation with the patient.

The histopathology of the left breast revealed a 70 mm grade 3 ILC with focal DCIS with clear margins. The receptor status was ER and PR positive, and HER-2 negative. The SLNB from the contralateral (right) side showed macrometastasis of tumour cells consistent with contralateral axillary lymph node metastasis (CAM). Clinical examination and imaging review of the right breast showed no evidence of malignancy. Furthermore, a positron emission tomography/CT scan did not show distant metastases (figure 3).

TREATMENT

The patient's case was discussed at our institution's MDT—given the tumour stage (T3) and taking the patient's wishes into account, the patient was scheduled for a right axillary clearance and prophylactic right mastectomy with a plan for adjuvant chemotherapy. The patient had preference for a right mastectomy given her concerns of having previous breast cancer, and the current asymmetry resulting in imbalance and decreased functionality.

OUTCOME AND FOLLOW-UP

Final histopathology showed no evidence of malignancy in the prophylactic right mastectomy and all 15 lymph nodes in the left axilla were negative for



© BMJ Publishing Group Limited 2022. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Goh IY, Dauway EL. *BMJ Case Rep* 2022;**15**:e248741. doi:10.1136/bcr-2022-248741

Case report

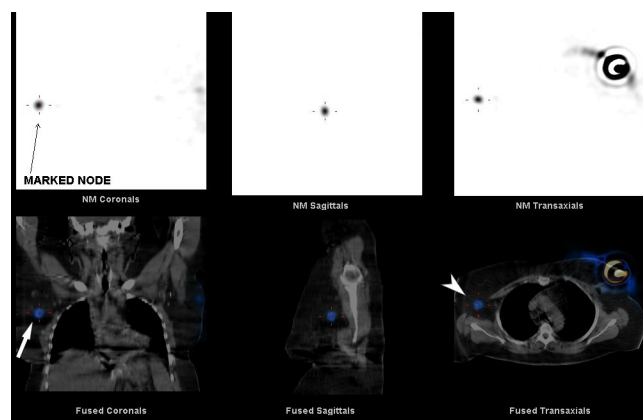


Figure 1 Fused lymphoscintigraphy image showing radiotracer uptake in the right axilla. Black arrow shows radiotracer uptake. White arrow in coronal image demonstrates radiotracer uptake in contralateral (right) sentinel lymph node. White arrowhead in axial image demonstrates uptake in the right axilla. NM, nuclear medicine.

further metastases. She proceeded with adjuvant chemotherapy as per our institution's MDT recommendation.

DISCUSSION

Breast cancer is the most commonly diagnosed malignancy and the leading cause of cancer death¹ in women. Screening for breast cancer is the best method for detecting early breast cancer, however, patients still present with advanced breast cancer. While ipsilateral axillary lymph node metastasis is more common, CAM although rare, has an incidence of 1.9%–6%.^{4–6}

The lymphatic drainage of the breast most commonly goes to the ipsilateral axilla and internal mammary glands; less common drainage patterns are to retromammary, cervical nodes, peritoneal cavity and contralateral breast/axilla.⁷ However, disruption of common lymphatic drainage may alter the drainage pattern by creating collateral flow to the contralateral axilla. This may be secondary to malignant involvement of the lymphatic channels,^{8,9} previous breast¹⁰ or axillary surgery, and adjuvant radiotherapy.

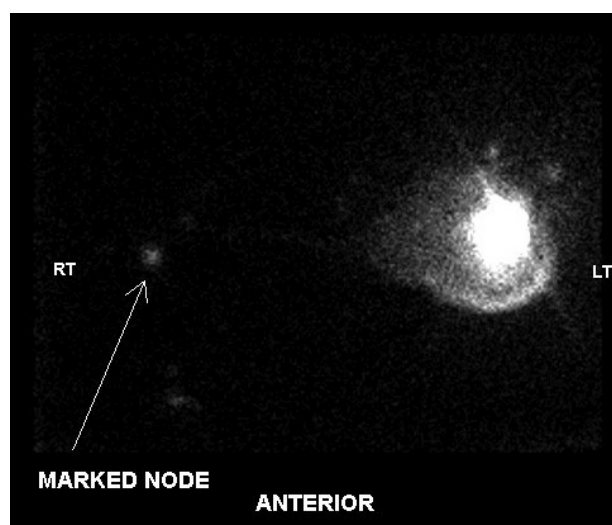


Figure 2 Lymphoscintigraphy showing right axilla sentinel lymph node radiotracer uptake following administration of technetium^{99m} in left breast. LT, Left; RT, Right.

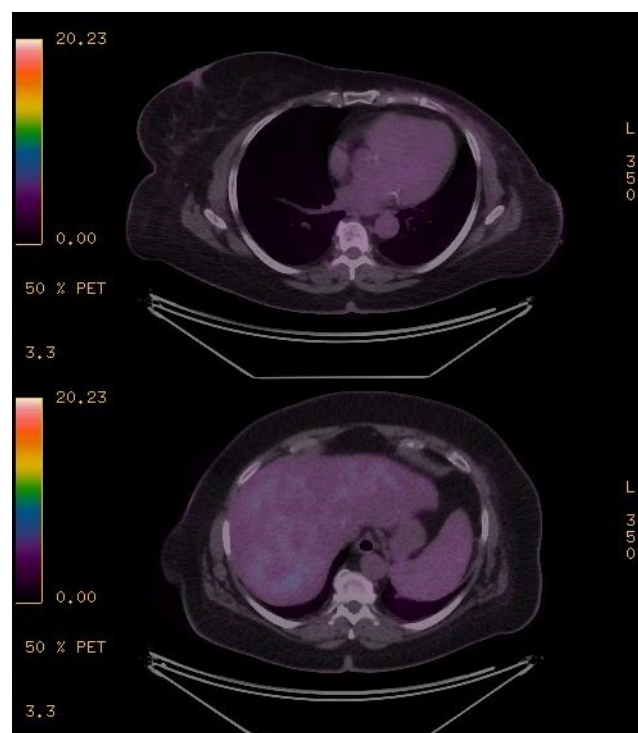


Figure 3 Axial PET/CT slices postleft mastectomy and right sentinel lymph node biopsy, showing no evidence of distant metastases. PET/CT, positron emission tomography/CT.

Regardless of CAM being synchronous or metachronous, by virtue of its location, metastasis of breast cancer to the contralateral site is currently recognised as stage IV disease, with the metastatic classification as M1.¹¹ However, there is argument for CAM to be considered as a locoregional (N3) disease rather than a systematic (M1) disease due to the postulated aberrant lymphatic flow resultant from either previous malignancy or treatment.¹²

In our patient with synchronous CAM, histopathology demonstrated no evidence of breast cancer in the contralateral (right) side following her prophylactic mastectomy. The absence of malignancy in the right breast, therefore, rules out occult breast cancer as the cause of the CAM, suggesting that disrupted lymphatics from either previous breast surgery, axillary surgery or radiotherapy could have affected this. However, CAM was only identified due to a serendipitous event. This may suggest that CAM may be an underinvestigated phenomenon, as the

Learning points

- ▶ Extra axillary metastases from breast cancer can occur, in particular, in patients with previous surgery to the affected sided.
- ▶ Lymphatic drainage patterns are altered in patients with previous breast/axillary surgeries and adjuvant treatment.
- ▶ Further studies are needed to determine if contralateral axillary lymph node metastasis (CAM) behaves as locoregional disease rather than a distant metastatic process.
- ▶ Future studies, therefore, would help to understand the natural history of synchronous CAM in recurrent breast cancer.

current guidelines do not suggest routine lymphoscintigraphy in a recurrent breast cancer with previous axillary dissection.

Currently, the implications of CAM are unclear. A review by Chkheidze *et al*¹² noted variable long-term survival in patients with CAM, with poorer prognosis in patients with synchronous CAM due to being diagnosed at a more advanced stage of the disease.¹² It has also been noted that the median progression-free survival of patients with CAM is only 10 months,⁸ possibly suggesting a more aggressive biology of the cancer. It remains to be seen if routine lymphoscintigraphy in patients with recurrent breast cancer would provide more accurate staging. In our patient, CAM would not have been detected if a lymphoscintigraphy and SLNB had not been performed, thereby delaying adjuvant treatment which may offer long-term disease-free survival.

Further research is needed to determine the role of lymphoscintigraphy in patients with recurrent breast cancer.

Contributors Both authors, IYG and ELD, have made substantial contribution to the following manuscript: 'Synchronous contralateral axillary lymph node metastasis in a recurrent breast cancer following previous axillary clearance'. The contributions are as follows: 1. Initial conception: IYG and ELD. 2. Design of work, acquisition of data and analysis and initial draft: IYG. 3. Interpretation of data and revision of draft for critically for important intellectual content: IYG and ELD. 4. Final approval of version published: IYG and ELD. 5. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved: IYG and ELD.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Consent obtained directly from patient(s)

Provenance and peer review Not commissioned; externally peer reviewed.

Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

ORCID iD

Ian Y Goh <http://orcid.org/0000-0002-6717-1504>

REFERENCES

- 1 Sung H, Ferlay J, Siegel RL, *et al*. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin* 2021;71:209–49.
- 2 Giuliano AE, Ballman KV, McCall L, *et al*. Effect of axillary dissection vs no axillary dissection on 10-year overall survival among women with invasive breast cancer and sentinel node metastasis: the ACOSOG Z0011 (Alliance) randomized clinical trial. *JAMA* 2017;318:918–26.
- 3 Cancer Australia, S.H., NSW. *Guidance for the management of early breast cancer: recommendations and practice points*, 2020.
- 4 Daoud J, Meziou M, Kharrat M, *et al*. [Contralateral axillary lymph node metastasis of cancer of the breast]. *Bull Cancer* 1998;85:713–5.
- 5 Devitt JE, Michalchuk AW. Significance of contralateral axillary metastases in carcinoma of the breast. *Can J Surg* 1969;12:178–80.
- 6 Gingerich J, Kapenhas E, Morgani J, *et al*. Contralateral axillary lymph node metastasis in second primary breast cancer: case report and review of the literature. *Int J Surg Case Rep* 2017;40: :47–9.
- 7 Tanis PJ, Nieweg OE, Valdés Olmos RA, *et al*. Anatomy and physiology of lymphatic drainage of the breast from the perspective of sentinel node biopsy. *J Am Coll Surg* 2001;192:399–409.
- 8 Wang W, Yuan P, Wang J, *et al*. Management of contralateral axillary lymph node metastasis from breast cancer: a clinical dilemma. *Tumori* 2014;100:600–4.
- 9 Morcos B, Jaradat I, El-Ghanem M. Characteristics of and therapeutic options for contralateral axillary lymph node metastasis in breast cancer. *Eur J Surg Oncol* 2011;37:418–21.
- 10 Barranger E, Montravers F, Kerrou K, *et al*. Contralateral axillary sentinel lymph node drainage in breast cancer: a case report. *J Surg Oncol* 2004;86:167–9.
- 11 Giuliano AE, Edge SB, Hortobagyi GN. Eighth edition of the AJCC cancer staging manual: breast cancer. *Ann Surg Oncol* 2018;25:1783–5.
- 12 Chkheidze R, Sanders MAG, Haley B, *et al*. Isolated contralateral axillary lymph node involvement in breast cancer represents a locally advanced disease not distant metastases. *Clin Breast Cancer* 2018;18:298–304.

Copyright 2022 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <https://www.bmj.com/company/products-services/rights-and-licensing/permissions/>
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

Customer Service

If you have any further queries about your subscription, please contact our customer services team on +44 (0) 207111 1105 or via email at support@bmj.com.

Visit casereports.bmj.com for more articles like this and to become a Fellow