

A Case Report On a Rare Presentation Of Recurrent Breast Cancer As an Anterior Mediastinal Mass 9 Years After Mastectomy And Adjuvant Therapy

Joan Gan Cheau Yan*

Department of General Surgery, Hospital Sultanah Aminah, Johor Bahru, Johor, Malaysia

Abstract

The recurrence of breast cancer following treatment is about 13% for a patient with stage III breast cancer. The usual sites of recurrence are the breast, mastectomy scar, regional lymph nodes or distant metastasis such as lung, bone, lymph node, liver and pleura. We present a rare case of breast cancer recurrence presenting as an anterior mediastinal mass.

Keywords: anterior mediastinal tumour, chest wall, internal mammary lymph node, metastasis, breast carcinoma

Case report

A 53 years old Chinese lady presented with a painless vague swelling at the anterior chest wall following a trivial fall. It was located at the right parasternal region overlying the second and third ribs. On examination, it appeared smooth with a bony consistency and normal overlying skin (Figure 1). Plain chest radiograph was normal but the CECT thorax and abdomen revealed a right anterior mediastinal mass extending anteriorly into the subcutaneous tissue traversing in between the costochondral cartilage measuring 5.3 x 5.7 x 5.3cm (Figures 2-4) and eroding the sternum (Figure 2). Her PET scan showed increased fluorodeoxyglucose activity over the lesion with no other systemic activity (Figure 5). The tumour markers (alpha-fetoprotein, CEA, LDH) were normal. An imaging-guided core biopsy of the mass was done and subsequently reported as metastatic undifferentiated carcinoma. Immunohistochemical staining showed the following: estrogen receptor (3+), progesterone receptor (-), c-erbB2 (-), CK7/20 (+), TTF1 (-) and concluded the tumour is of breast origin. There was no other distant metastasis or tumour recurrence found as confirmed by recent mammography, bone scan and PET scan.

Her past medical history was significant for stage IIIC left breast infiltrating ductal carcinoma in 2009. The tumour was described as occupying almost the entire left breast. She received 8 cycles of doxorubicin and cyclophosphamide followed by left mastectomy and level III axillary clearance. The histo-pathological examination reported an 8cm tumour of infiltrative ductal carcinoma and all 21 nodes resected showed tumour metastasis. The surgical margin was clear. She received another 4 cycles of paclitaxel and 25 fractions of radiation therapy to the left axilla and supraclavicular fossa after surgery. Tamoxifen (20mg daily) was added to her systemic therapy and planned to complete for 10 years. She had remained well and was compliant to treatment and follow up with mammography.

Other past surgical history includes total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAHBSO)

and limited right hemicolectomy in 2013 for chronic cervicitis with Nabothian cysts and mucinous cystadenoma of the appendix.

The multidisciplinary team reviewed the patient and it was decided that she should receive hormonal therapy. She was started on Letrozole (2.5mg daily) and will be reassessed with repeat CECT in 6 months.

Discussion

The mediastinum is the space between the lungs which is bounded by the thoracic inlet superiorly, the diaphragm inferiorly, the sternum anteriorly, the spine posteriorly and the pleural spaces laterally. The anterior mediastinum is confined to the space anterior to the great vessels and pericardium. The structures within this space include the thymus, internal mammary arteries, internal mammary lymph nodes, connective tissue, and fat. The commonest mediastinal tumours that often arise from the anterior mediastinum include thymoma, teratoma, thyroid disease and lymphoma [1]. Our patient had a lesion that was located in the anterior mediastinum. Its infiltrative appearance with poor dermacation suggested the lesion was likely malignant and therefore an imaging guided tissue biopsy was performed to confirm the diagnosis.

The lymphatic drainage pattern from the breast as described by Estourgie et al. [2] regardless of the quadrant, is most commonly into the axillary nodes followed by internal mammary chain. Other extra-axillary sites of drainage include supraclavicular, infraclavicular, interpectoral, and intramammary sentinel nodes. We believed our patient must have had recurrence in the internal mammary chain which slowly developed into an anterior mediastinal mass. The metastasis could have happened through the lymphatic spread as she had node positive disease.

Breast cancer recurrence is known to be highest during the first 5 years following the treatment. It can present as local recurrence, such as in the ipsilateral treated breast or near the mastectomy scar, in the regional lymph nodes or as distant metastasis. The sites of metastasis for breast carcinoma as reported by Lee, from most to least common, were lung, bone, lymph nodes, liver, and

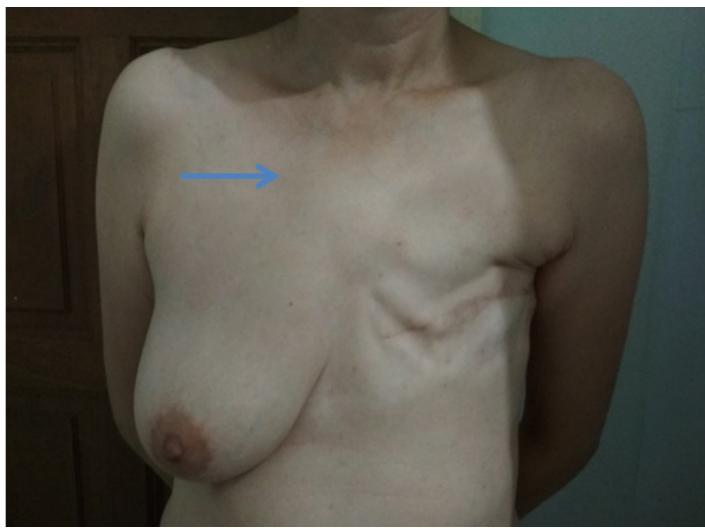


Figure 1. Slightly raised right sided anterior chest wall swelling with normal overlying skin (arrow).

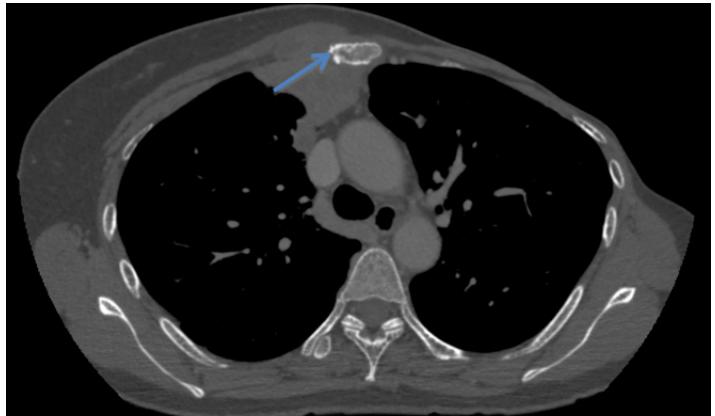
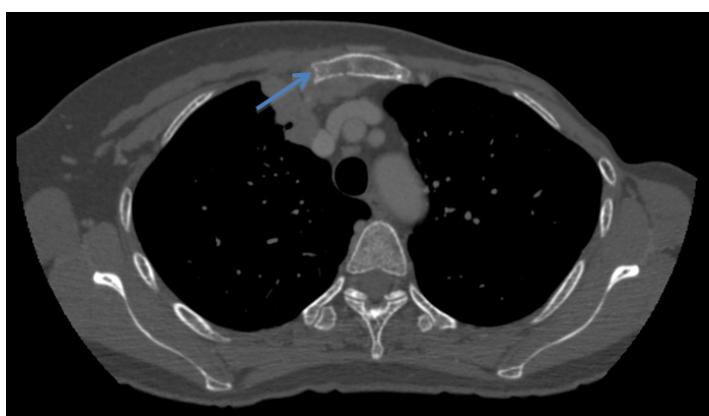


Figure 2. The erosion of sternum (arrow) by the anterior mediastinal mass.

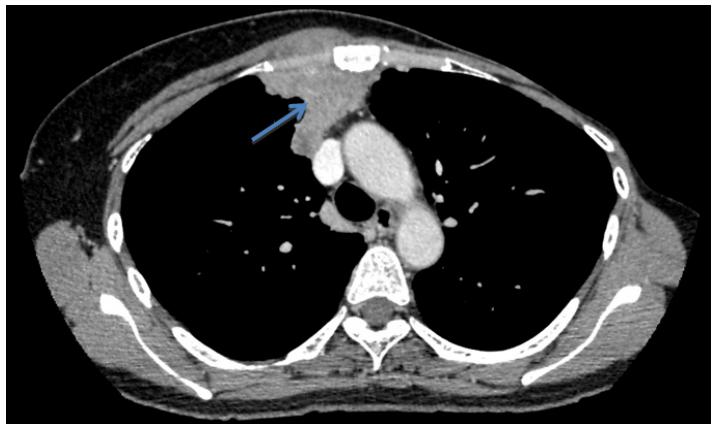
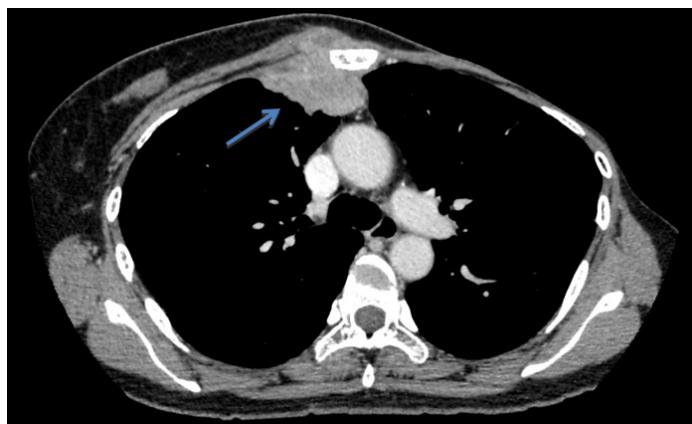


Figure 3. The anterior mediastinal mass (arrow) without clear plane extending anteriorly beyond the sternum (cross section view).

pleura [3]. Our patient was followed up with clinical review according to Malaysian Clinical Practice Guideline (CPG) 2010 [4]: three monthly for the first year then six monthly for the five years and subsequently annually. She was also followed up with mammography (MMG) yearly after mastectomy according to the NICE guideline (2009). Despite regular follow up, her lesion was not detected as she experienced no symptom and her surveillance MMG was unremarkable. The 5-year residual risk of recurrence for patients with stage III breast cancer was reported at 13% [5]. Despite surviving through the first 5 years, this patient developed a recurrence at the ninth year following her breast cancer treatment. It is important to carry out a careful clinical examination during each follow up visit and any suspicious lesion should be investigated promptly as breast cancer recurrence is still possible even after 5 years, especially in our case, with stage III breast cancer, who had a high risk of recurrence.

Conclusion

We would like to suggest an extended 6 monthly clinical reviews up to 10 years following cancer treatment for patient with

locally advanced breast cancer. The importance of proper clinical examination during follow-up visits of breast cancer patient is again emphasized. Any suspicious lesion is warranted for prompt investigation to enable detection of recurrence and early treatment.

References

1. Juanpere S, Cañete N, Ortúñoz P, Martínez S, Sanchez G, et al. A Diagnostic Approach to the Mediastinal Masses. *Insights Imaging*. 2013; 4: 29-52.
2. Estourgie SH, Nieweg OE, Olmos RA, Rutgers EJ, Kroon BB. Lymphatic Drainage Patterns from the Breast. *Ann Surg*. 2004; 239: 232-237.
3. Lee YT. Breast Carcinoma: Pattern of Metastasis at Autopsy. *J Surg Oncol*. 1983; 23: 175-180.
4. <http://www.moh.gov.my/penerbitan/CPG2017/6915.pdf>
5. Brewster AM, Hortobagyi GN, Broglio KR, Kau SW, Santa-Maria CA, et al. Residual Risk of Breast Cancer Recurrence 5 Years After Adjuvant Therapy. *J Natl Cancer Inst*. 2008; 100: 1179-183.

*Correspondence: Joan Gan Cheau Yan, Department of General Surgery, Hospital Sultanah Aminah, Johor Bahru, Johor, Malaysia, Tel: +60 7-223 1666; E-mail: cyjoan2020@gmail.com

Rec: Jan 29, 2018; Acc: Feb 15, 2018; Pub: Feb 19, 2018

J Clin Case Rep Rev. 2019;2(1):31
DOI: gsl.jccrr.2018.000031

Copyright © 2018 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY).