

Occult Breast Cancer Presenting as Axillary Nodal Metastasis – A case report and literature review

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Abstract

Introduction: Axillary lymph node (ALN) metastasis from an occult breast cancer is a rare presentation and can be a diagnostic and therapeutic challenge. After ruling out the other sites of malignancy by metastatic workup, mastectomy and axillary clearance or breast conservation surgery should be carried out with appropriate adjuvant therapy.

Objective: Rare occurrence and controversies in investigations and recommended treatment justify reporting our case.

Method: Report of a rare case and literature review.

Results: We report a case of 42 years old woman presenting with right sided axillary mass for last four months. On examination she had a 3x4 cm. mass in the right axilla, both breasts were normal. General physical and systemic examinations were within normal limits. Fine needle aspiration cytology (FNAC) of the right axillary mass showed metastatic adenocarcinoma, rest of the investigations including chest X-Ray, ultrasound of the abdomen, mammogram and MRI of the breasts were normal. She was offered mastectomy and axillary clearance followed by adjuvant chemo-radiation and hormone therapy. Histopathological examinations of the axillary lymph nodes revealed infiltrating ductal carcinoma and positive hormonal receptor status however, mastectomy specimen failed to reveal any carcinoma. She did not have evidence of any recurrence after 3 years of follow-up.

Conclusions: All isolated ALN metastasis should be considered as occult primary breast cancer unless otherwise prove.

Keywords: Occult breast cancer, Axillary nodal metastasis.

Introduction

Occult breast cancer is an uncommon clinical entity accounting for less than 1% of all breast cancer patients.¹ Malignant tumour of other sites like lung, thyroid, gastrointestinal tract, ovary, melanoma etc. also can occasionally metastasized to axilla^{2,3} however, most common source of primary cancer in such cases is the ipsilateral breast unless otherwise proved.^{2,3} Diagnosis and treatment remain challenging in these patients. Relevant investigations to rule out other sites of malignancy and mastectomy with axillary clearance are recommended. Due to its rare occurrence and therapeutic dilemma, we decided to report our case who presented with a right axillary mass without any evidence of primary malignancy. An effort was made to review available literatures—for addressing the recommended investigations and treatment in such a clinical entity.

Case report

A-42 years old, parity four, pre menopausal woman presented to our surgical clinic with a right axillary mass for last 4 months without any other significant complaints. According to the patient swelling was significantly increasing in size for last two months. She did not have any contributory past or family history. All the babies were breast feed and she never used any form of hormonal contraceptives in the past.

On examination, her general health was good and vital signs were within normal limits without any systemic abnormal findings. Local examination revealed a 3x4 cm. mass in the right axilla. Surface was nodular and skin overlaying the mass was normal. Both the breasts, left axilla and both supraclavicular fosse were normal.

Fine needle aspiration cytology (FNAC) of the right axillary mass done in a private clinic was reported as metastatic adenocarcinoma, strongly suspicious of infiltrating ductal carcinoma of the breast. Patient was further investigated and all routine blood examination results, chest X-ray, ultrasound of the abdomen were normal. Bilateral Mammogram and MRI breasts showed normal architecture without any abnormalities.

Looking at the physical findings and investigation results patient was diagnosed as a case of right occult breast cancer with right axillary lymph node metastasis. Patient was planned for right mastectomy and right axillary clearance. Operative finding was a big matted ALN encasing the axillary vein but not infiltrating it. Complete all level three ALN clearances was done carefully avoiding injury to the axillary vessel. Both the Latissimus dorsi pedicle and long thoracic nerves were identified and preserved. There was no lump in the mastectomy specimen and Histopathological examination revealed infiltrating ductal carcinoma involving 5 nodes out of 14 nodes harvested from the axillary dissection. There was no tumour in the mastectomy specimen. Estrogen and progesterone status was positive in the axillary nodes.

Subsequently patient was subjected to 6 cycles of paclitaxel and adriamycin based chemotherapy at an interval of 3weeks, radical radiotherapy (50GY#25) and hormonal therapy (Tamoxifen 20mg daily x 5years). Patient was followed up for 3 years and there was no recurrence.

Discussion

Occult breast cancer presenting with axillary lymph node metastasis as a first sign is rare among breast cancers.⁽⁴⁾ However, for all practical purpose in case of isolated ALN metastasis, occult breast cancer should be the most relevant differential diagnoses in absence of any other primary site malignancy after doing initial diagnostic workup. Feuerman³ stated that once carcinoma reaches the axillary lymph nodes from an extramammary source, the primary lesion is no longer “occult” it will be definitely detectable by initial diagnostic workup.

The actual incidence of occult breast cancer is not clearly addressed but a study done by Owen et. al.¹ stated the incidence as 0.3% and Pentheroudakis et al.⁵ as 0.12 to 0.67% with 23.4% positive family history of carcinoma breast. There is no definite length of time has been mentioned in between secondary involvement of axillary nodes and discovery of primary in breast in relation to occult breast cancer. However, Halstead⁶ vaguely stated it as ‘a few months’ to ‘two and a half years’.

Pentheroudakis et al.⁵ in their meta analysis reported, the mean age at the time of diagnosis as 52.4 years and in 66% of the cases it affected postmenopausal women. Following axillary clearance, mean nodal size was 2.4 cm (range 0.5 -10.0 cm) with 52% of patients suffering from N2-3 disease. Histopathological examination of mastectomy specimen revealed 72% occult breast primary lesion and in 87% of the cases the lesion was less than 2 cm size. However, the rate of mammographic identification of primary lesion was 10- 20% in the same group of patients. Histological type was ductal carcinoma in 83%, lobular in 13% and other types in 4% of the cases. Ductal or lobular in situ carcinomas were detected in 5-10% of the cases as well. Positive staining for oestrogen receptor (ER) was seen in 43%, progesterone in 41% and HER2/neu in 31% cases. Most of the reviewed studies also reported the similar type of presentations.

Kemeny et al.⁷ reported that in a female patient in such situation, investigations other than related to

breast cancer are unnecessary. A thorough history taking, physical examination, FNAC of the palpable axillary lymph node, Chest X-ray, ultrasound of the abdomen, screening blood work, mammogram and /or Magnetic resonance imaging (MRI) of the breast are sufficient as the recommended investigations for locating potential sites of primary carcinoma. As some other carcinomas also can present with axillary metastases at the initial presentation, relevant investigations to establish primary site malignancy are recommended. However, almost more than half of these patients failed to show any primary site of malignance in spite of doing all the available investigations. MRI of the breasts was highly sensitive⁵ (59%) in detecting occult primary lesion in breasts and MRI increased the rate of breast conservation surgery. Hence, MRI should be the recommended imaging for breast in such cases. Estrogen and progesterone receptor status with estimation of HER2/neu status are very useful for treatment planning and it also helps in establishing the diagnosis as breast cancer.

Regarding management level I and II with or without level III Axillary lymph nodes dissection is a standard practice and radiotherapy must be advised accordingly (4 or more ALN+ve &N2/N3 disease). Feigenberg et al.⁸ reported 50% recurrence rate when the axilla is treated only with radiotherapy (RT) in comparison to axillary dissection (<10%). ALN biopsy (without formal axillary dissection) followed by RT to axilla also showed higher recurrence (20-50%) as well. He concluded ALN dissection as an essential component for better loc-regional control of disease

for such patients. In case of fixed unresectable ALN, neoadjuvant chemotherapy followed by ALN dissection in case of response could be a valid option.⁵

Treatment of the ipsilateral breast in patient with occult primary and axillary lymph node metastasis remains controversial.⁵ The standard approach in several series was 'blind' modified radical mastectomy (MRM)^{3,5,6,7} at the time of axillary clearance. However, various studies^{7,9,10} have showed that there is no significant difference in treat outcome in between mastectomy and breast conservation therapy(BCT) in patients where occult primary can be located after imaging. Vlastos et al.¹¹ in their series of 45 cases reported as mastectomy versus BCT; locoregional recurrence(15% versus13%), distant metastasis (31% vs 22%) and 10 years survival(66% vs 64%). Earlier few authors^{10,12} tried conservative management(observation only) of the breast after treating the axilla; but after analyzing their results it was seen that 5 year disease free survival is significantly better in the patient treated with mastectomy or BCT (83%) along with axillary treatment than in patient with conservative management to the breast after treating axilla (43%). All these authors concluded that observation is not an acceptable treatment option.

Without any surgery of the breast, just whole breast irradiation of the ipsilateral breast is the alternative treatment recommended⁽¹³⁾ Foroudi et al.¹⁴ reported in their study local recurrence as 100% for observation group versus30% for the group receiving breast irradiation and 0% for mastectomy group at the end of median follow up of 73 months (all these patients underwent axillary treatment).They concluded that in the absence of gross breast abnormalities, breast irradiation coupled to surgical extirpation of axillary disease, is feasible and effective in achieving local control rate and survival.

Adjuvant systemic therapy in the form of chemotherapy (as all these patients were node positive) and hormone therapy depending on hormone receptor status should be advocated as studies^{10,12} showed overall survival advantage of adjuvant systemic therapy. Trastuzumab for HER2 over expressing tumour should be advised similarly.¹⁵

Prognoses of these patients are more or less similar to carcinoma breast stage II/III.¹³ Mean 5-year overall survival was stated as 72% in the meta analysis done by Pentheroudakis et al.⁵ and 10 years survival as 50-71% in some other studies.^{7,9,10} Survival has not been shown to be dependent on whether the primary cancer in the mastectomy specimen was found or not.⁹ Both nodal and oestrogen receptor (ER) status have been shown to be major prognostic variables.⁹

Conclusions

All isolated ALN metastasis should be considered as occult primary breast cancer unless otherwise proved. MRI breast, FNAC of axillary mass along with other metastatic workup should be carried out in all cases. Axillary dissection with mastectomy or BCT followed by appropriate adjuvant therapy is recommended. Prognosis is comparable to stage II /III breast cancer.

Conflict of Interest: None.

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