

Metastatic breast lump: A rare presentation of squamous cell lung cancer

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ABSTRACT

Breast metastases from extramammary neoplasm are uncommon with an incidence of 0.5% to 3% of patients with extramammary malignancy. We reported an extremely rare case of breast metastasis from squamous cell lung carcinoma. A 60-year-old woman suffered from dry cough with shortness breath for one month with simultaneous development of breast lump. The histological diagnosis, achieved by bronchoscopic lung biopsy with the aid of immunohistochemistry was squamous cell lung carcinoma. Breast lump was a metastasis from lung, confirmed by histopathology and immunohistochemistry after core needle biopsy. Secondary malignancy metastatic to the breast is uncommon, yet this entity does exist. In view of the therapeutic implication, a metastatic breast lesion should not be mistaken for a primary breast carcinoma. Only with the awareness of such a possibility can prompt diagnosis and optimal treatment be achieved.

Key words: Breast, metastasis, squamous cell cancer lung

INTRODUCTION

Breast metastases from extramammary neoplasms are uncommon with an incidence of 0.5% to 3% of patients with extramammary malignancy.^[1] Breast metastasis is often confused with primary breast malignancy. Accurate differentiation of metastatic breast carcinoma from primary breast carcinoma is of crucial importance because the treatment and prognosis differs significantly. The pathologist has a key role in making the diagnosis of metastasis to the breast when histological appearance is similar to primary breast tumor. The clinical history is helpful to make the diagnosis. Metastasis to the breast usually indicates disseminated metastatic disease and poor prognosis. Despite the fact that the lung is the most common cancer site in terms of incidence and mortality, there are only few published cases on lung cancer metastasizing to the breast.^[2] We are reporting a rare case of metastasis to the breast from squamous cell lung

cancer at the onset of presentation in a 60-year-old female.

CASE REPORT

A 60-year-old women suffered from dry cough and shortness of breath for three weeks with simultaneous presence of a painful lump in the upper outer quadrant of right breast for same duration. She came to our pulmonary medicine clinic when she had an episode of hemoptysis. She was a bidi smoker for 40 years with a smoking index 800. She had moderate pallor without any clubbing and palpable peripheral lymph nodes. On examination of respiratory system, there were signs of right upper lobe (RUL) collapse like dull percussion note in apical area of right side with shifting of trachea to the right side. Examination of breast lump revealed a hard 3 × 3 cm globular tender freely mobile lump in upper outer quadrant of right breast without any fixity to skin and deeper structures and without any fistula and sinus formation. Left breast was normal. There was no discharge from both the nipple and it appeared normal. She was non-diabetic, non-hypertensive and had anemia.

On chest x-ray there was a presence of homogenous triangular opacity on right side at apical area with shifting of horizontal fissure and shifting of trachea to the ipsilateral side suggestive of RUL collapse. Sputum for Zeihl-Neelsen

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(Z-N) staining and for malignant cells for consecutive four days was negative. CT scan thorax with contrast showed RUL collapse with mediastinal lymphadenopathy without any associated pleural effusion along with a cast of nodular soft-tissue opacity in right breast. Ultrasonography (USG) of abdomen was normal but USG of breast revealed solid mass with some cystic changes. Mammogram showed a well-defined mass lesion, not obviously malignant in right upper quadrant. Fibre-optic bronchoscopy revealed white infiltrative growth completely obstructing the right upper lobe bronchus, and on biopsy squamous cell lung carcinoma was diagnosed [Figure 1a]. Core needle biopsy from breast lump revealed solid sheets of neoplastic epithelial cells infiltrating the fibrous stroma without apparent ductal formation. Benign mammary ducts were surrounded by the tumor cells, suggestive of metastatic deposits from squamous cell lung cancer [Figure 1b]. The tumor cells from breast tissue were strongly positive for high-molecular-weight cytokeratin (34bE12), weakly positive for low-molecular-weight cytokeratin (35bH11) and negative for estrogen receptor, progesterone receptor and thyroid transcription factor-1 in the immunohistochemical study. Both the histology features and the immunostaining profile of the breast lesion were consistent with those of the biopsy specimen of the lung tissue, suggestive of a metastatic squamous cell carcinoma from the primary squamous cell lung cancer.

She received first cycle of chemotherapy with carboplatin and docetaxel. After three weeks during second cycle she came to us with severe dyspnea due to superior venacaval syndrome and massive pleural effusion and died after two weeks.

DISCUSSION

Metastasis in a case of newly diagnosed non-small cell lung cancer can occur in 11% to 36% of patients and commonly involved organs include liver, adrenal glands, brain, bone, kidney abdominal nodes etc.^[3,4] Among unusual metastatic sites are stomach, pancreas, small bowel, arteriovenous hemangioma, choroids plexus, muscle, umbilicus and

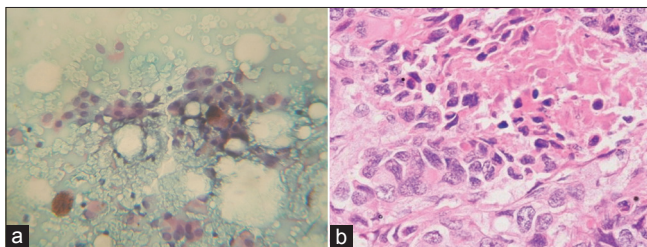


Figure 1: (a) Bronchoscopic biopsy of lung showing neoplastic cells with keratin pearls suggestive of squamous cell carcinoma (b) Core needle biopsy of right breast lump showing solid sheets of neoplastic epithelial cells infiltrating the fibrous stroma without apparent ductal formation suggestive of metastasis from squamous cell carcinoma

the penis. Squamous cell lung carcinoma with metastasis to the breast at presentation has rarely been reported. Breast metastases usually present as well-circumscribed, palpable, freely mobile, rapidly growing, painless firm masses in the upper outer quadrant of breast. Multiple, bilateral and diffuse involvement of metastatic lesions is uncommon.^[5]

Breast metastasis can be diagnosed between a time interval of 1 month and 15 years after the diagnosis of primary extramammary neoplasm, with averages between 1 and 5 years.^[6] Occurrence of breast metastasis is high in pubescent, lactating, and pregnant women as female hormones may play role in cancer predisposition.^[6] Overall metastasis to the breast has been associated with poor prognosis with most patients dying within a year of diagnosis.^[7]

Mammography may be useful in the differential diagnosis of primary and metastatic breast malignancy. The typical mammographic presentation of metastatic breast malignancy is a round and dense mass with absence of microcalcifications and speculation, except in the rare cases of metastasis from ovarian carcinoma, and neither architectural distortion nor thickening of the skin is present.^[8] Because the metastatic breast lesion evokes minimal proliferation of fibrous tissue surrounding the lesion, it is about the same size on palpitation and mammography. In contrast, the palpable mass of primary breast carcinoma is frequently larger than the mammographic size.^[9] Fine-needle aspiration cytology has been reported to successfully identify both primary and metastatic malignancy in the breast.^[10] Although radiology can provide some information to distinguish primary breast cancer from metastatic disease, excisional or core biopsy is usually needed for final diagnosis. The contribution of immunohistochemistry is very crucial to confirm the diagnosis, as in our case. Secondary malignancy metastatic to the breast is uncommon, yet this entity does exist. In view of the optimal treatment plan, a metastatic breast lesion should not be mistaken for a primary breast carcinoma.

REFERENCES

1. Paulus DD, Lidshitz HI. Metastasis to the breast. *Radiol Clin North Am* 1982;20:561-8.
2. Ramar K, Pervez H, Potti A, Mehdi S. Breast metastasis from non-small-cell lung carcinoma. *Med Oncol* 2003;20:181-4.
3. Abrams HL. Metastasis in carcinoma. Analysis of 1000 autopsied cases. *Cancer* 1950;3:74-85.
4. Quint LE, Tummala S, Brisson L, Francis IR, Krupnick AS, Kazerooni EA, et al. Distribution of distant metastases from newly diagnosed non-small cell lung cancer. *Ann Thorac Surg* 1996;62:246-50.
5. Mozaffari A, Rashidi I, Paziari F. Extra mammary tumors metastasis

- to the breast. *Pak J Med Sci* 2008;24:468-70.
6. Vergier B, Trojani M, De Mascarel I, Coindre JM, Le Treut A. Metastatic to the breast: Differential diagnosis from primary breast carcinoma. *J Surg Oncol* 1991;48:112-6.
 7. Yoon MY, Song CS, Seo MH, Kim MJ, Oh TY, Jang UH, *et al.* A case of metachronous metastasis to the breast from non-small cell lung carcinoma. *Cancer Res Treat* 2010;42:172-5.
 8. Chaignaud B, Hall TJ, Power C, Subramony C, Scott-Conner CE. Diagnosis and natural history of extramammary tumors metastatic to the breast. *J Am Coll Surg* 1994;179:49-53.
 9. Bohman LG, Bassett LW, Gold RH, Vovert R. Breast metastases from extramammary malignancies. *Radiology* 1982;144:309-12.
 10. Wakey PE, Powers CN, Frable WJ. Metachronous soft-tissue masses in children and young adults with cancer: Correlation of histology and aspiration cytology. *Hum Pathol* 1990;21:669-77.

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