

Squamous Cell Lung Carcinoma Metastatic to the Breast

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Abstract. *Secondary malignancy metastatic to the breast is uncommon with an incidence of 0.5% to 3% of patients with extramammary malignancy. Here, an intriguing, rare case with metastasis to the breast from squamous cell lung carcinoma is reported. A 48-year-old women suffered from chronic cough with sputum for two months. The histological diagnosis, a achieved by bronchoscopic biopsy was squamous cell lung carcinoma. Concurrent chemoradiation therapy was given. Unfortunately, a left breast lump was noted eight months later and metastatic squamous cell lung carcinoma to the breast was diagnosed by surgical 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.*

Secondary malignancy metastatic to the breast is uncommon with an incidence of 0.5% to 3% of patients with extramammary malignancy (1, 2). Most studies have reported an association with lymphoma, leukemia, and melanoma (3). Other malignancies including ovary, prostate, stomach, malignant mesothelioma and rhabdomyosarcoma have been reported in several patients with breast metastasis (1, 2, 4, 5). Here, an intriguing, rare case with metastasis to the breast from squamous cell lung carcinoma is reported.

Case Report

A 48-year-old women suffered from a chronic cough with sputum for two months. Chest computed tomography was

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arranged and revealed (Figure 1) a low density mass (open arrow) in the right upper lobe with adjacent focal obstructive atelectatic lung change, right pleural effusion, and metastatic nodules in bilateral lungs and left pleura (arrows). A bronchoscopy with biopsy was performed and the histological diagnosis was squamous cell lung carcinoma (Figure 2 A). The stage of the disease was T4 N3 M1, stage IV. Concurrent chemoradiation therapy of paclitaxel with cisplatin and external irradiation to the mediastinum and RUL tumor site with 63 Gy in 35 fraction was given.

Unfortunately, a left breast lump was noted eight months later. A transverse sonogram of the left breast showed a partially ill-defined hypoechoic mass in the inner lower quadrant of the left breast (Figure 3).

A surgical biopsy was conducted and microscopically, the breast lesion revealed solid sheets of neoplastic epithelial cells infiltrating the fibrous stroma without apparent ductal formation. Benign mammary ducts were discernible surrounded by the tumor cells (Figure 2 B). The tumor cells were strongly positive for high-molecular-weight cytokeratin (34 β E12), weakly positive for low-molecular-weight cytokeratin (35 β H11) 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 previous biopsy specimen of the lung cancer, suggestive of a metastatic squamous cell carcinoma from the lung rather than a primary metaplastic carcinoma of the breast.

Discussion

The incidence of metastasis from newly diagnosed non-small cell lung cancer ranges from 11% to 36%. Common metastatic sites include the liver, adrenal glands, brain, bone, kidney and abdominal nodes (6, 7). Other unusual metastatic sites are the stomach, pancreas, small bowel, arteriovenous hemangioma, choroids pleus, muscle, umbilicus and the penis. To the best of our knowledge, squamous cell lung carcinoma with metastasis to the breast has rarely been reported.



Figure 1. Enhanced axial CT showing a low density mass (open arrow) in the right upper lobe with adjacent focal obstructive atelectatic lung change, right pleural effusion, and metastatic nodules in bilateral lungs and left pleura (arrows).

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 (8). Microcalcifications and speculation are usually not present, except in the rare case of metastasis from ovarian carcinoma, and neither architectural distortion nor thickening of the skin is present (8, 9). 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). It is a pity that mammography was not done in our case. The sonographic picture revealed a partially ill-defined hypoechoic mass without obvious surrounding architectural distortion (Figure 3). Thus, despite the existence of the basic differences between the image presentations of primary breast carcinoma and metastatic breast malignancy, there is amazing similarity between metastatic breast malignancy and benign breast lesions. Fine-needle aspiration cytology has been reported to successfully identify both primary and metastatic malignancy in the breast (10, 11). Excisional or core biopsy is usually needed for final pathological confirmation. Immunohistochemical studies may be needed to further confirm the diagnosis, as in our case.

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.

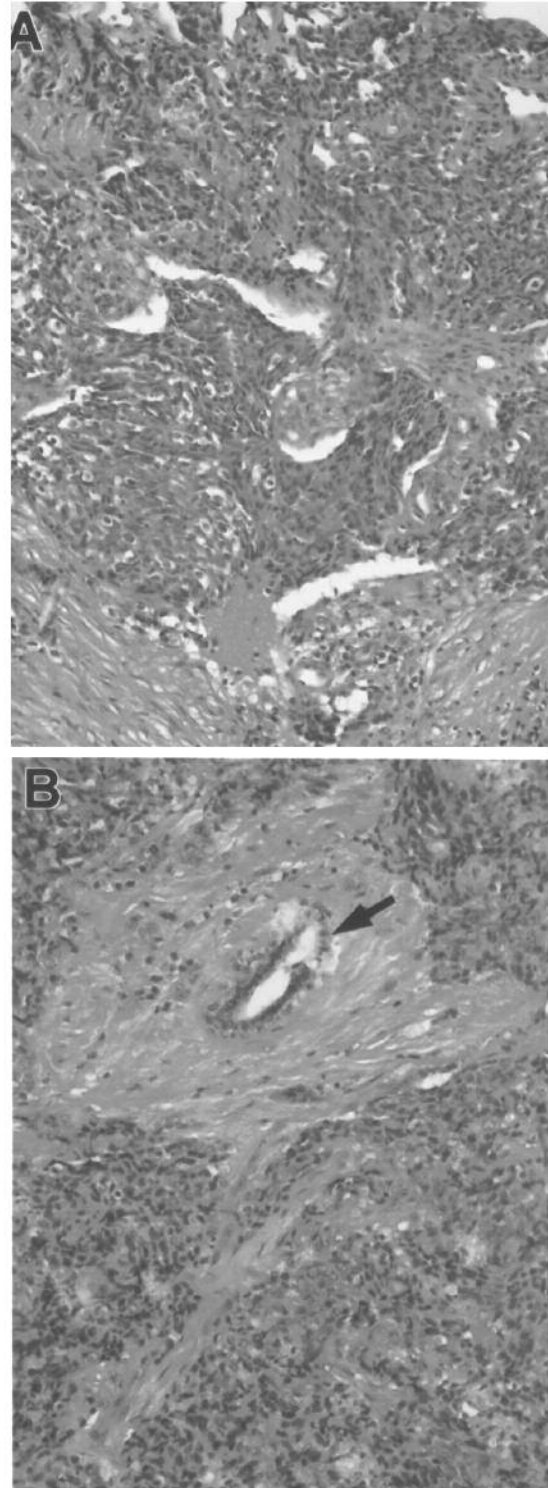


Figure 2. Microscopic findings of the lung biopsy specimen and the excision specimen of the breast tissue. A) Nests of neoplastic squamous epithelial cells present in the lung tissue. B) Solid sheets of neoplastic epithelial cells around the benign mammary duct (arrow) in the fibrous stroma in the breast lesion. The tumor cells were histologically and immunohistochemically consistent with those of lung cancer. (Hematoxylin and eosin stain; original magnification, x200).

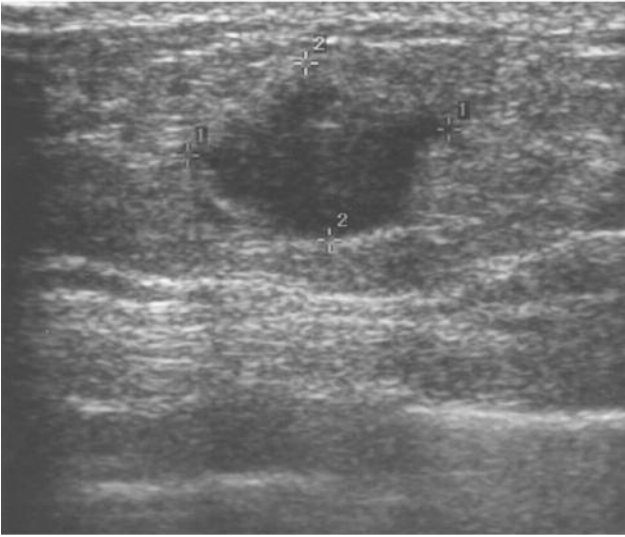


Figure 3. Transverse sonogram of the left breast showing a partially ill-defined hypoechoic mass in the inner lower quadrant.

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