ABSTRACT

A 38-year-old woman presented to our hospital with breast and lung metastases from cervical cancer. Breast metastasis of cervical cancer is extremely rare. According to our search in the literature, 30 cases of breast metastases from cervical cancer have been reported to date. While metastasis from contralateral breast is the most frequent type, metastases from lymphoma, malign melanoma and lung cancer are also found in lower frequencies.

Key words: Cervical cancer, breast metastasis, therapy

INTRODUCTION

While tumors metastasizing to breast tissue are rarely seen, the most frequent metastasis comes from contralateral primary breast cancers. Apart from contralateral breast carcinoma, metastases from lymphoma, melanoma and bronchial carcinoma are also seen frequently. The incidence of extra-mammalian organ metastases in clinical practice is 0.2-1.3 % whereas that in autopsy studies turns out to be 1.2-6.6%. Even in the presence of diagnosed primary carcinoma, it is not easy to differentiate extra-mammalian tissue metastasis from primary breast carcinoma. In the light of the information from the literature, we hereby discussed a case in which a patient with cervical cancer was assumed curative in the beginning, but later presented with breast and lung metastases.
CASE REPORT

A 38-year-old woman presented to the hospital with abnormal cycle of menstruation one year ago. Endocervical curettage was performed to her. Biopsy result showed invasive squamous cell carcinoma. The case was evaluated as stage IIIB and concomitant chemoradiotherapy and later intracavitary brachytherapy were applied. Seven months ago, she developed non-productive coughing, and thoracic CT(Computed Tomography) was performed, which showed metastatic lesions of 17x13 mm in the posterior segment of right lower lobe of the lung and another 40x30 mm lesion surrounding the bronchus of the right middle lobe and also a mass in the left breast (Figure 1). The pathologic result of bronchoscopic biopsy was consistent with metastasis of cervical squamous cell carcinoma. She also presented with a lesion on her back near to the right armpit, and physical examination showed an erythemic lesion of 3x5 cm with bullous center. Mammography was performed a mass in the left breast (Figure 2). The skin biopsy revealed epithelial cells consistent with malignancy. Re-staging was performed with PET-CT(Pozitron Emission Computed Tomography) scan. The result showed; hypermetabolic metastases of right supraclavicular and mediastinal lymph node packets; metastatic masses in posterior basal segment of left lower lobe, posterior basal segment of right lower lobe and apical segment of right upper lobe of lung; hypermetabolic lymph packets in para-aortocaval region; hypermetabolic nodular lesions among right gluteal muscles; hypermetabolic lesions in right ischiorectal fossa; and metastatic lesions in posterior site of right acetabular roof. The biopsy performed two months ago from palpable mass in left breast revealed minimally-differentiated squamous cell carcinoma, suspicious of metastasis (Figure 3). She was evaluated clinically and diagnosed as metastatic squamous cell carcinoma of cervix. Systemic chemotherapy was initiated and treatment and follow-up program are still under way.

Figure 1. Thoracic Computed Tomography showed a mass in the left breast.
Breast metastasis of cervical cancer

Figure 2. Mammography showed a mass in the left breast.

Figure 3. Pathologic findings:
- a) Tumor cells had showing marked nuclear pleomorphism, large eosinophilic cytoplasm in squamous character (hematoxylin-eosin, X400).
- b) Immunohistochemical staining with p63-positive staining in tumor cells, X400.
Breast metastasis of cervical cancer

DISCUSSION

Cervical cancer is one of the most frequent malignancies of women, and with the development of imaging and scanning techniques, the mortality rate has decreased. It can metastasize to pelvic and para-aortic lymph nodes via lymphatic ducts and to distant organs through blood vessels\(^3\)\(^-\)\(^4\). Metastases to distant organs like liver, lung and bones are the most frequent ones while metastasis to breast is quite rare. Metastatic incidence of 0.5-6.6% has been reported in autopsy and clinic series. The most frequent metastatic tumors to breast are malign melanoma, lymphoma, lung cancer, soft tissue cancer, ovary cancer and gastrointestinal tract tumors\(^1\)\(^-\)\(^2\),\(^4\)\(^-\)\(^8\).

Metastatic lesions to the breast generally present with palpable mobile masses. Pain and deformation (due to distortion) are other complaints. Metastatic masses to the breast are generally found in the upper lateral quadrant and mostly superficial. Involvement of axillary lymph node, skin involvement which yields the appearance of inflammation in the breast and involvement of the chest walls are rarely found. Left breast is mostly involved. However, both breasts may be affected with diffuse multiple lesions\(^4\),\(^8\)\(^-\)\(^14\). Metastatic lesions to the breast are difficult to differentiate from primary benign and malign lesions\(^4\),\(^13\). Appearance of the metastatic masses to breast is non-specific in mammography, and generally is simulating malignant lesions. Ultrasound (US) may help in diagnosis\(^4\),\(^9\),\(^11\)\(^-\)\(^12\). Especially in young females, whose breast parenchyma is dense, magnetic resonance imaging (MRI) may be useful. In MRI with radiocontrast agent, invasive carcinoma and metastatic lesions have higher signal intensity in the first three minutes\(^15\). Although there is no imaging technique yet available to differentiate metastatic lesions from primary ones, metastatic lesions tend to be round and well-demarcated.

Table 1. Differences between primary breast tumors and metastatic breast tumors on imagings.

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<th>Mammography</th>
<th>Generally mass with calcifications or spiculations</th>
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<td>Non spesific features such as well-circumscribed round mass without micro calcifications and spiculations</td>
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<tr>
<td>Magnetic resonance imaging</td>
<td>Well-circumscribed mass</td>
<td>Spiculated margins, low signal intensity on pre-contrast T1 and heterogeneous low signal intensity on pre-conrast T2 weight</td>
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Generally, metastasis to breast takes place in the first two years after diagnosis of primary malignancy is established. Kelkar et al published cases of cervical cancer beginning in the form of breast metastasis. Yountan et al reported a breast metastasis case nine years after primary diagnosis. In the literature, one case was reported in the form of inflammatory breast and three cases as bilateral breast involvement. Among 30 cases of
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metastasis to breast, 10 cases were in early stage; 9 in advanced stage; and others metastatic. Synchronized metastases were reported to be found mostly in lung, bone and liver. Despite all the available treatments, most of the patients were lost within one year after metastasis to breast was diagnosed. All in all, metastasis of cervical cancer to breast is quite rare. Most cases reported in the literature also had multiple metastases, and prognosis was usually bad. As risk of breast cancer, together with other gynecologic cancers, is increasing, synchronized breast metastasis should not be overlooked because treatment modality and prognosis are very different. Treatment of metastatic lesions was limited, and enough data is lacking. Thus, we believe that treatment and follow-up plans of the cases should be shared in the literature.

CONSENT

The patient has consented to the publication of this case.

COMPETING INTERESTS

No competing interest is declared.

REFERENCES