Breast Metastases from Nasopharyngeal Carcinoma: a case report and literature review

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Breast metastases from nonmammary neoplasms are rare, accounting for approximately 2% of breast tumor. A case of nasopharyngeal carcinoma with metastases to breast was presented and the diagnostic problems of this condition were reviewed. Metastasis to the breast has poor prognosis. Earlier diagnosis of this tumor may lead to more rational therapy and avoidance of unnecessary radical surgery.

Key words: Breast metastases; Nasopharyngeal carcinoma

The breast is an uncommon site of metastasis. Incidence of breast metastasis from other primaries ranges from 1.7 to 6.6% in an old autopic study, 1.2 to 2% in clinical reports, and 2.7% on the basis of cytological examination respectively [1]. Except for the primary tumors from the opposite breast, melanomas and lymphomas are the most common source of metastases [2,3]. Carcinoma of lung, ovary, carcinoid, leukemia, rhabdomyosarcoma were reported in a limited numbers of case report. Primaries from head and neck cancers were rare and a primary from nasopharyngeal carcinoma (NPC) are extremely rare. Sham and Choy were the first group to report a case of nasopharyngeal carcinoma that had metastasized to breast in 1991 [4]. Diagnosis and management of metastases to the breast can present with difficulties to the radiologist and the clinician. Despite of its rarity, the exact recognition of this problem is important. An accurate diagnosis will avoid unnecessary mastectomy. We report a case of breast metastases from nasopharyngeal carcinoma.

CASE REPORT

41 year-old woman presented to our Department of Ear, Nose and Throat in August 6, 1997 with a complaint of a palpable mass at the left aspect of neck for 2 months which is accompanied by intermittent headache and nasal obstruction. Nasopharyngoscopy showed a bulging mass on left lateral nasopharynx. CT scan revealed a large heterogeneous mass in left nasal cavity and left ethmoid sinus with adjacent bony destruction and invasion to left maxillary sinus and sphenoid sinus. Enlarged lymph nodes are noted in retropharyngeal space and posterior triangle extension from C1 to C7 level which are in favor of metastatic lymphadenopathy. Complete staging work-up showed poorly differentiated squamous cell carcinoma of nasopharynx, T3N1M0, Stage III (American Joint Committee on Cancer Staging). Concurrent
Chemotherapy with Cisplatin 80 mg, 5-FU 850 mg and Radiation therapy to the primary tumor and regional neck nodes was given in September 1997; dose to the primary tumor in the nasopharynx and sinuses was 7020 cGy/39 fractions/85 days, dose to upper neck was 7020 cGy/39 fractions/85 days. And lower anterior neck dose was 5580 cGy/31 fractions/75 days to the right and 6660 cGy/37 fractions/81 days to the left involved neck. Intermittent leukopenia and intolerable mucositis as well as skin reactions were complained on the 6th week of treatment, temporary 3-week treatment interruption was given; thus, resulting into treatment prolongation.

In July 1998, she complained of left arm lymphedema with palpable left axillary lymphadenopathy. Examination of the breast at that time was normal. Palliative radiation therapy to left axilla to a dose of 5940 cGy/33 fractions/43 days was given, which rapidly relieved discomfort.

In October 1998, a mass on left aspect of neck and a palpable lump at left central breast measuring 2 cm in diameter was found. Breast sonography showed an irregular hypoechoic nodule with size of 2.57 cm at 2 o’clock direction of left breast, 1 cm from nipple. Multiple ill-defined nodules were identified in left breast, outer quadrant, in which malignancy was highly suspected. No definite enlarged axillary lymphadenopathy was found (Fig. 1a & 1b). Aspiration biopsy of breast mass showed a picture of metastatic nasopharyngeal carcinoma. The in-situ hybridization for Epstein-Barr virus-encoded RNA (EBER) (Fig. 2a, 2b, 2c) was also positive confirming the diagnosis. Palliative radiation therapy to left breast and left anterior neck mass were given to a dose of 5040 cGy/28 fractions/39 days and 3600 cGy/17 fractions/25 days respectively. Chemotherapy was suggested but patient refused. Despite complete shrinkage of breast and neck mass after treatment, progressive subcutaneous metastases to abdominal wall, left arm, bilateral cheeks and right upper neck occurred. Short courses of palliative radiation therapy was given to some of this area. Unfortunately, her condition rapidly deteriorated and on November 1998, a follow-up CT scan showed recurrent tumor over orbital apex and left paratracheal lymph node metastasis. No further treatment was given due to poor general condition. In January 1999, right adrenal gland and lung metastases were diagnosed and she died three weeks later.

**DISCUSSION**

Although primary breast carcinoma is a very common tumor, the incidence of breast involvement by other cancers is quite low. The most common sources are malignant melanomas and the lymphoma/leukemia group. The relatively low incidence of breast metastases from head and neck cancers are probably due to its low tendency to disseminate. However, nasopharyngeal carcinoma differs from other head and neck cancers in its predilection to distant spread and systemic failure occur in one third of patient despite chemotherapy.

We report this case of breast metastasis from nasopharyngeal carcinoma, showing that the breast is not immune to metastasis from NPC. In our case,
breast lesion manifested after left axillary lymph node dissemination and this made its metastatic nature suspected on clinical ground alone. We later confirmed it by fine needle aspiration biopsy and Epstein-Barr virus special stain.

Metastatic tumors within the breast are more likely to be superficial, less fixed to the surrounding tissue with or without fixation to the skin, round or oval and well circumscribed. They are usually firm and solitary mass. Toombs and Kalisher observed that solitary lesion was the most common form of clinical presentation (85%), with diffuse involvement in 4% [3].

Accurate differentiation of metastatic from primary lesion is of crucial importance because the treatment and prognosis differ significantly. However, several clues to the metastatic nature of breast lump have been reported and could help in early diagnosis. Bohman et al stress that breast size of metastatic origin is approximately the same size on palpation and mammography. The metastatic lesions were well circumscribed and not associated with microcalcifications or secondary skin or nipple changes and exhibits unusually rapid growth [5]. Derchi et al reported their experience with ultrasonography. They found that the posterior walls of most breast metastases lesions were well defined and a great acoustic attenuation was never seen [4]. However, in recent published article showed that posterior acoustic shadowing could be present in some cases [6]. Therefore, further additional image study such as CT scan or MRI may provide useful information.

The distinction of primary breast carcinoma from metastatic disease on the frozen and the permanent sections are based on both cytologic and architectural findings. The most helpful architectural features in identifying a metastatic malignancy is the presence of periductal infiltration without intraductal or interlobular carcinoma [7]. Unfortunately, this features is not seen in fine needle aspiration biopsies, in which diagnosis relies entirely on the cytologic findings. Silverman et al recommend that any fine needle aspiration specimen with unusual cytologic features should performed additional auxillary studies. This would include immunoperoxidase and ultrastructural studies on the cytologic material.

The prognosis of patients presenting with metastatic tumor to the breast is poor. Survival after the detection of a metastatic breast mass varies from 13 days to more than 3.5 years. Most patient do not survive beyond 6 months [8].

Correct diagnosis is very important for the management. If the lesions turn out to be a secondary
tumor, the patient can be spared unnecessary breast surgery and the clinician will be able to choose a more appropriate treatment such as palliative radiation therapy and chemotherapy.

REFERENCES

鼻咽癌合併乳房轉移：病例報告與文獻回顧

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非乳房腫瘤轉移至乳房是一種相當罕見的疾病，大約只占乳房惡性腫瘤的2%。我們提出的病例報告一位鼻咽癌，第三期，經合併化學治療與放射線治療後追蹤1年原發部位無復發現象但發現乳房腫瘤轉移。本文探討可能在診斷上碰到的問題與後續處理。乳房轉移的預後非常不好。故提早診斷可以得到更合理的治療與預防不必要的開刀切除。

關鍵詞：乳房轉移，鼻咽癌