

Breast carcinoma metastatic to nasopharynx

Nazofarinkse metastaz yapmış meme karsinomu

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ABSTRACT

Metastatic breast carcinoma has been described at numerous sites in the head and neck region. Here, we report a case of a 56 year old female patient with invasive ductal carcinoma metastasizing to the nasopharynx. The patient presented initially with liver metastasis followed by metastasis to the nasopharynx. This is the second documented and first proved case of metastatic breast carcinoma to the nasopharynx.

Key words: Breast carcinoma, nasopharynx, immunohistochemistry

ÖZET

Metastatik meme karsinomu baş ve boyun bölgesinde birçok yerde tanımlanmıştır. Bu makalede nazofarinkse metastaz yapan meme invaziv duktal karsinomlu 56 yaşındaki kadın hasta olgusu sunulmuştur. Olguda başlangıçtaki karaciğer metastazını takiben nazofarinks metastazı izlenmiştir. Nazofarinkste metastatik karsinom son derece nadirdir. Bu olgu, meme karsinomunun ikinci belgelenmiş ve ilk kanıtlanmış nazofarinks metastazıdır.

Anahtar sözcükler: Meme karsinomu, nazofarinks, immünohistokimya

INTRODUCTION

Most tumors arising in the nasopharynx are either squamous cell carcinomas or so-called undifferentiated carcinomas of the nasopharyngeal type. Metastatic tumors to this region are rare, but cases metastatic to the nasopharynx from pulmonary and renal primaries have been reported in the literature (1). In the present case, an invasive breast ductal carcinoma metastasizing to the nasopharynx was noted.

CASE REPORT

A 56 year old woman presented in July 2003, with palpable mass in the upper inner quadrant of her right breast. A right modified radical mastectomy and an axillary node dissection

were performed. The tumor was 4.5 cm in its largest diameter. The pathological diagnosis was invasive ductal carcinoma with 12 of 18 axillary nodes involved (pT2pN1). Immunohistochemical stains at that time indicated that tumor cells were negative for estrogen (ER) and progesterone (PR) receptors and Herceptest was 1(+). Postoperatively, the patient received six courses of chemotherapy. At the completion of chemotherapy, she underwent radiotherapy. In November 2004, Her2/neu gene amplification was detected by fluorescence in situ hybridization (FISH) technique. The patient received weekly Herceptin with an initial 4 mg/kg dose and subsequent 2-mg/kg doses. In February 2005, she developed liver nodules as evidenced by follow-up computed tomography (CT) consistent with metastatic disease. A subsequent bone scan showed no bone metastases. In March 2005, CT scans of the brain and temporal bone were unremarkable. Head and neck examination revealed

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a vegetant 0.5 cm mass in the nasopharynx (Figure 1). Histopathology of the punch biopsy demonstrated large pleomorphic cells with hyperchromatic nuclei and scant cytoplasm forming glands and solid epithelial sheets (Figure 2). Invasion of vascular spaces was also detected. The morphologic and cytologic features were identical to those of the primary breast carcinoma (Figure 3). Immunohistochemical stains revealed that the tumor cells were positive for GCDFP-15 (Figure 4a,4b), PR, AR, CEA and c-erb-B2 and negative for ER, Thyroglobulin, TTF-1, HMB-45, S-100, p63 and GFAP. Mucin was not detected with Alcian blue/PAS stain. The immunohistochemistry results confirmed the microscopic impression that the tumor had metastasized from the breast. The diagnosis was metas-



Figure 1. Endoscopic examination demonstrating left sided nasopharyngeal mass.

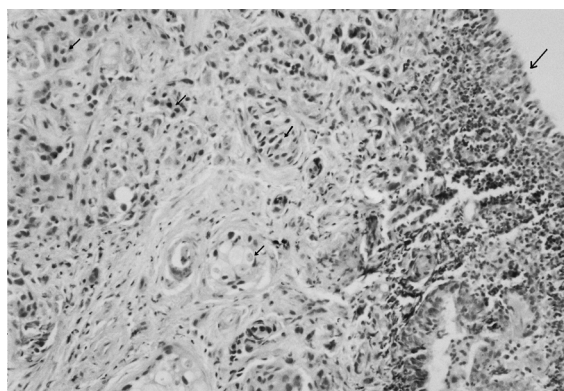


Figure 2. Biopsy of the nasopharyngeal mass demonstrating large pleomorphic cells with hyperchromatic nuclei and scant cytoplasm forming glands and solid epithelial sheets. Ciliated surface epithelium was shown with thick, and tumor cells with thin arrows (HE x100).

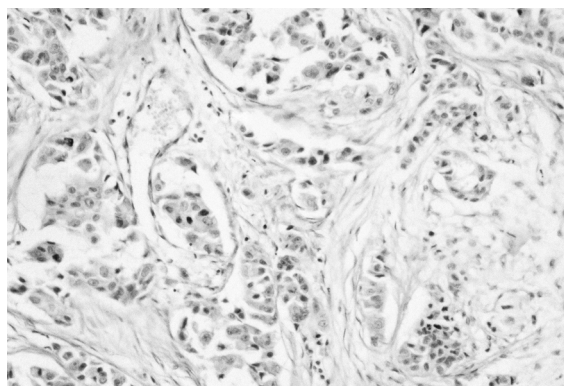


Figure 3. Invasive ductal carcinoma of the primary breast lesion (HE x200).

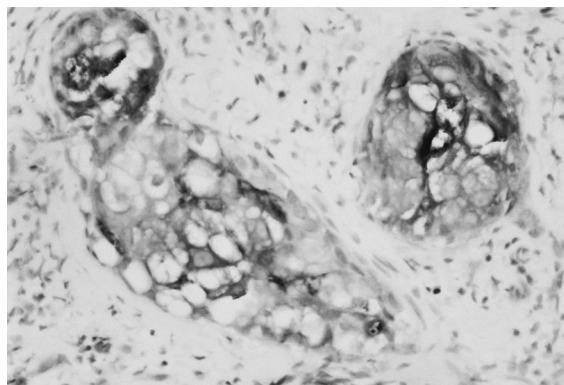
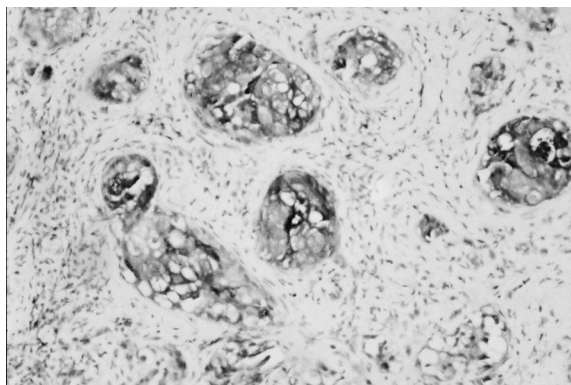


Figure 4. Tumor cells showing GCDFP-15 positivity a) immunoperoxidase staining x200 b) immunoperoxidase staining x400.

tatic carcinoma consistent with breast carcinoma. The patient has been referred for palliative chemotherapy. In April 2005, a CT scan demonstrated nodular lesions in lungs, liver, spleen, and left surrenal. Also sclerotic and lytic metastasis were found in the vertebral bodies. After a few weeks her condition deteriorated and she died in April 2005.

DISCUSSION

Breast carcinoma spreads by both hematogenous and lymphatic channels (2). The most common metastatic sites are the lungs, bone, and liver, whereas nasopharyngeal involvement by metastatic breast disease is rare (2,3). Metastatic breast carcinoma in head and neck has been reported at various different sites including larynx, nose, sinonasal tract and temporal bone (4-6).

At a microscopic level, there may be morphological mimicry between salivary duct carcinomas (SDC) and ductal mammary carcinomas. Despite its resemblance to breast carcinoma with positive reactivity for GCDFP-15, SDC can be differentiated as it is positive for androgen receptor (AR) (7), may be positive for prostate-specific antigen and prostatic-acid phosphatase, and rarely reactive for estrogen (1.3% reactivity) and progesterone (6% reactivity) receptors (8). The immunophenotype AR+/ER-/PR-/GCDFP+ in a malignant salivary tumor with an intraductal pattern is characteristic of SDC but does not completely exclude metastasis from the breast, which might also be AR+ and ER/PR- in a lesser proportion of cases (9). GCDFP-15, a glycoprotein originally isolated from human breast gross cystic fluid has been shown to be expressed in primary carcinomas of the breast, salivary, sweat, and prostate gland (10,11). Swanson et al. (10) detected GCDFP-15 immunopositivity in 76% of benign and 28% of malignant salivary gland tumors. Fifty three (41%) of 133 cases were positive for GCDFP-15. Tubuloglandular components in 82% of

pleomorphic adenomas were reactive, and 24% of adenocarcinomas were stained, but neither adenoid cystic carcinoma nor polymorphous low-grade adenocarcinoma were labeled with GCDFP-15 (10). Previous studies related to the expression of estrogen and progesterone receptors in salivary gland tumors have reported conflicting results. Expression of ER and/or PR in a proportion of both benign and malignant salivary tumors has been suggested, but some studies have failed to detect any ER or PR positivity. However strong expression of ER or PR receptors and GCDFP-15 favors a diagnosis of the carcinoma of mammary origin (2,7,12-14). In our case, a previous history of breast carcinoma, morphologic resemblance to the primary breast tumor, absence of intraductal carcinoma-like areas, positive immunoreactivity of PR and GCDFP-15 with negative reactivity of GFAP strongly support the diagnosis of carcinoma metastasizing from the breast, rather than the diagnosis of a salivary gland tumor.

Bronchogenic carcinoma of the lung, renal cell carcinoma, malign melanoma and breast carcinoma metastatic to the nasopharynx have been reported in the literature (1). Saab et al. (3) reported the first case of metastatic adenocarcinoma of the breast to the nasopharynx. However, there is some vague points with that case. Nasopharyngeal metastasis together with pulmonary nodules have been described to arise approximately 7 years following the diagnosis of breast carcinoma. Although the histologic type seemed to be identical it could be originated from a second primary malignancy of the lungs, leading to a nasopharyngeal metastasis. To our knowledge, our case is the second documented and first proved case of metastatic breast carcinoma to the nasopharynx. Metastatic breast carcinoma to the head and neck region is associated with a poor prognosis because the primary disease is usually advanced and widespread by the time secondary disease manifests clinically (3,4).

In conclusion, metastases to nasopharynx

from a distant primary are rare. The use of appropriate immunohistochemical markers may be helpful in arriving at the correct diagnosis, as in our case. A metastasis, although rare, should be included in the differential diagnosis of a nasopharyngeal lesion since it may clinically mimic a benign neoplasm or primary carcinoma.

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