Unusual association of diseases/symptoms

Nasopharynx carcinoma: a rare primary for bilateral breast metastasis

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To conclude, bilateral breast metastases from the undifferentiated carcinoma of nasopharynx are rare. Breast metastases are commonly confused with the more common primary carcinoma of breast. Diagnosis is based on the core needle biopsy of the lesion which is helpful in the appropriate treatment planning of the patient.

BACKGROUND

Metastases from undifferentiated nasopharyngeal carcinoma cancers are rare, and only three well-documented cases have been reported in the English literature. Although primary breast carcinoma is a very common tumour, the incidence of breast involvement by other malignancies is quite low about 0.5% to 6%.

CASE PRESENTATION

A young female patient presented with complaints of right cheek swelling. On clinical examination, there was a swelling over the right cheek and right eye proptosis.

There was no significant social, medical and family history.

INVESTIGATIONS

The patient was referred to our department for MRI for evaluation of the para nasal sinuses. MRI showed presence of a soft tissue density lesion which was hypo intense on T1w, hyper intense on T2w and not suppressed on short τ inversion recovery. It predominantly involved the posterior wall of nasopharynx. Antero-superiorly the lesion extended in to the anterior and posterior ethmoidal air cells. Laterally on right side, the lesion eroded the medial orbital wall and extended into the extraconal space and involved the orbital fat. It was adherent to the medial rectus muscle (figure 1). Bilateral enlarged cervical lymph nodes (level Ib, II and III) were present. The radiological diagnosis of nasopharyngeal malignancy was established. Ultrasonography guided biopsy of the right cervical lymph node was performed and histopathology revealed metastatic nasopharyngeal carcinoma (figure 2B).

Other investigations such as ultrasound of the abdomen and pelvis and chest x-ray were normal. There was no evidence of metastasis elsewhere.

DIFFERENTIAL DIAGNOSIS

The patient was a known case of primary undifferentiated nasopharynx carcinoma, so no other differential diagnosis was kept.

TREATMENT

The patient was referred for chemotherapy. She received two cycles of paclitaxel, 5fluorouracil(5F-U) and three cycles of paclitaxel, cisplatin and 5F-U. Postchemotherapy she underwent a repeat MRI to assess response. No significant change in the size and extent of the lesion was seen. Then the patient was referred for radiotherapy. She received 66Gray/33 fractions over a period of a month.

OUTCOME AND FOLLOW-UP

Two months later she presented with multiple bilateral painless, palpable breast lumps. Clinically there were multiple well-defined lumps in both breasts not fixed to the skin or underlying muscle. Mammography showed dense parenchymal pattern in both breasts without micro calcification, nipple retraction or skin thickening. No significant lymphadenopathy was noted in either axillary region (figure 3). Ultrasound of the breast showed multiple well-defined lobulated hypo echoic lesions. On colour Doppler study few of the lesions showed minimal internal vascularity (figure 4).

Ultrasound guided biopsy of the breast lesion was performed and histopathology was consistent with the metastatic poorly differentiated carcinoma of the nasopharynx (figure 2A). The patient was then referred for chemotherapy. The Patient died sometime after breast metastasis developed.

DISCUSSION

Metastases from undifferentiated nasopharyngeal carcinoma cancers are rare, and only three well-documented cases have been reported in the English literature.¹

Although primary breast carcinoma is a very common tumour, the incidence of breast involvement by other malignancies is quite low about 0.5% to 6%.² The most common sources of metastases to breast are primary tumours from the opposite breast, melanoma and lymphoma.^{3 4} The relatively low incidence of breast metastases from head and neck cancers is probably due to its low tendency to disseminate. Primary from head and neck cancers and also from nasopharyngeal

Figure 1 MRI of nasopharynx, coronal T1w and post contrast T1w images show hypointense soft tissue mass which involves posterior wall of nasopharynx, extends into ethmoid air cells and laterally erodes medial orbital wall and infiltrates retro orbital fat and medial rectus muscle. Postcontrast axial T1w and coronal T1w images show mild to moderate enhancement.

Figure 2 Microphotograph shows (A) large tumour cells with hyper chromatic nucleus, irregular nuclear membrane and scanty to moderate cytoplasm. Features are suggestive of undifferentiated malignant tumour. As the patient is a known case of nasopharyngeal carcinoma, possibility of metastatic nasopharyngeal carcinoma undifferentiated type is favoured. (B) Microphotograph shows metastatic nasopharyngeal carcinoma in cervical lymph node. (H&E stain $\times 200$).

carcinoma are rare. One of the first cases of nasopharyngeal carcinoma that had metastasised to the breast was published in 1991.⁵ Diagnosis and management of metastases to the breast can present with difficulties to the radiologist and the clinician. An accurate differentiation of metastatic from primary lesion is of crucial importance because the treatment planning and prognosis differ significantly. It has been observed that solitary lesion is the most common form of clinical presentation (85%), with diffuse involvement in 4%.⁴ Metastatic lesions of the breast are more likely to be superficial, less fixed to the surrounding tissue with or without fixation to the skin, round and well margined. They are usually firm and solitary masses. They are not associated with micro calcifications and secondary skin or nipple changes and do not show rapid growth.⁶ It was previously considered that the posterior walls

of most breast metastases lesions were well defined and a great acoustic attenuation was never seen.⁵ However, recent published article shows that posterior acoustic shadowing can be present in some cases.⁷ Therefore, further additional radiological study such as MRI may provide useful information. The distinction of primary breast carcinoma from metastatic disease on the frozen and the permanent sections is based on both cytological and architectural findings. The most helpful architectural feature in identifying a metastatic malignancy is the presence of periductal infiltration without intraductal or interlobular carcinoma.⁸

The prognosis of patients presenting with metastases 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 patients do not survive beyond 6 months.⁹ If

Figure 3 Mammogram of both breasts shows dense parenchymal pattern.

Figure 4 Ultrasound with colour Doppler imaging shows multiple lobulated hypoechoic lesions with internal vascularity.

the lesions turn out to be a secondary tumour, 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.

Learning points

- Bilateral breast metastasis is rare in case of carcinoma nasopharynx though primary breast carcinoma is common.
- For confirmation core needle biopsy is must.
- The prognosis of patients presenting with metastases to the breast is poor.

Competing interests None.

Patient consent Not obtained.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Vaishnav KU, Pandhi S, Shah TS, Chaudhry A. Nasopharynx carcinoma: a rare primary for bilateral breast metastasis. *BMJ Case Reports* 2012; 10.1136/bcr.03.2012.6083, Published XXX

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