Orbital Metastasis Due to Interval Lobular Carcinoma of the Breast

A Potential Mimic of Lymphoma

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A 53-year-old woman had an orbital mass composed of a neoplastic small round cell infiltrate and no apparent extraorbital primary tumor. Although the initial diagnosis was primary orbital lymphoma, a combination of mucin histochemistry and immunohistochemical staining for cytokeratin and estrogen receptors led to the discovery of an impalpable lobular carcinoma of the breast. We discuss how detailed histopathological assessment can lead to beneficial therapy.

In most large series of orbital metastases, the breast is a major source. The histological type of breast carcinoma, however, is rarely recorded. We report a case of lobular carcinoma presenting 6 months after a mammogram screening that showed no abnormalities and in which the clinical and histological findings were potentially misleading, initially suggesting a diagnosis of lymphoma rather than metastatic carcinoma of the breast.
Metastatic tumors account for up to 13% of orbital masses, most frequently from breast, lung, prostate, and gut.1-3 The histological nature of metastases from the breast is seldom discussed in reports. Most primary carcinomas of the breast are ductal (80%), while 3% to 14% are lobular.

Scirrhous carcinoma, ie, ductal carcinoma with a high collagen content, may produce enophthalmos, blepharoptosis, and ocular palsy,3 presumably due to a mechanism similar to scar contracture. Lobular carcinoma has been noted to metastasize to the eyelid where it exhibits a foamy cytoplasmic appearance mimicking histiocytes, leading to confusion with the benign entity of xanthelasma.4 Van der Heijden et al5 reported a case of lobular carcinoma 5 years after mastectomy, with diplopia due to isolated infiltration of right inferior rectus and inferior oblique muscles. Reifler and Davison6 described the use of fluorescent immunohistochemistry to demonstrate estrogen and progesterone receptors in a 62-year-old with pain, ptosis, and ophthalmoplegia due to a metastatic lobular carcinoma. A palpable breast mass and axillary nodes were present.

Our patient was initially thought to have malignant lymphoma on the basis of the high nucleocytoplasmic ratio, nuclear uniformity, the single file and discohesive pattern of infiltration, and the absence of a known primary tumor. In the series by Shields et al1, orbital metastasis was the initial complaint in 9 (25%) of 35 cases of metastatic tumors of the orbit. In 4 a primary tumor was never found, 2 were from the breast, 2 from the lung, and 1 from the prostate. Both breast cases had a palpable mass. In the series by Font and Ferry,7 61% of the cases had isolated metastasis to the orbit, and in 10 of these 17 cases the primary site was never found. Goldberg et al2 in their more recent review, report that slightly more than 25% of cases of breast cancer metastatic to the orbit have an orbital tumor as the first sign of cancer.

Median survival after surgery for orbital metastasis from all primary sites has been estimated at 15.6 months.3 In the series by Shields et al1, patients with orbital metastases from the breast survived for an average of 21 months, compared with 4 months for lung and a combined average of 13 months for metastases from all primary sites. In the series of Goldberg et al,2 median survival for

Figure 1. Magnetic resonance imaging scan of orbit showing a superolateral, extraglacial neoplasm (arrow).

Figure 2. Small, uniform, noncohesive cells with scanty cytoplasm and bland, monomorphic nuclei infiltrate in single file through fibrous connective tissue (hematoxylin-eosin, × 250).

Figure 3. Left, Strong immunopositivity for the epithelial marker cell adhesion molecule 5.2 identifies these as metastatic carcinoma cells (streptavidin-biotin immunohistochemical, original magnification × 400). Right, Dense nuclear staining for estrogen receptor (streptavidin-biotin immunohistochemical, original magnification × 400).
breast cancer first noted by an orbital tumor was 12 months.

This case is unusual in that, although the breast has been identified as the primary source of orbital metastatic disease, there has never been a palpable lesion. This, combined with the histological appearance of a small round cell infiltrate, could lead the unwary into a mistaken diagnosis of primary lymphoma, and this case illustrates the contribution that modern histological diagnostic procedures can make in evaluating metastatic disease. The relatively long survival also emphasizes the benefits of referral to a specialist oncological service.

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