viously underwent uncomplicated PDT in the fellow eye. In addition, angiography failed to demonstrate any abnormalities within the retinal circulation, which leads to the conclusion that there may be an increased sensitivity of the choroid in these patients.

Four of the 8 patients were treated with combination PDT and intravitreal triamcinolone. It is unknown whether therapy combining PDT with intravitreal triamcinolone alters the response of the choroid because, to our knowledge, there have been no pathological studies of such eyes. Also unknown is the effect of the transient increase in intraocular pressure associated with intravitreal injections on the choroidal circulation in the presence of PDT; however, no patients developed evidence of prolonged pressure elevation.

It must be noted that all patients in this series had minimally classic or occult membranes, and this may represent a risk factor in the development of choroidal infarcts following PDT. The importance of this article is that patients should be made aware of this rare complication, which includes the possibility of immediate and permanent loss of vision following PDT with verteporfin, especially in patients with purely occult or minimally classic lesions.

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Tamoxifen-Induced Regression of a Choroidal Metastasis in a Man

We present a case of chemotherapeutic regression of a metastatic breast carcinoma to the choroid in a male patient. The rapid response to systemic tamoxifen prevented the patient from receiving local radiotherapy and helped confirm the suspected diagnosis of a choroidal metastasis.

Report of a Case. A 76-year-old man was referred with an inferior field defect. Right funduscopy revealed a solitary, pale, elevated choroidal mass underlying the superior temporal arcade (Figure 1). The mass was 3.7 mm high with a maximum basal diameter of 6.8 mm. The lesion showed low internal reflectivity on ocular ultrasound. No choroidal lesions were seen in the left fundus. The differential diagnosis was either an amelanotic melanoma or a metastatic deposit. He was investigated for metastatic disease prior to planned treatment with ruthenium plaque brachytherapy.

A shadow was detected on his chest x-ray film. On examination, the left nipple and areola were hard, indurated, and enlarged. Regional lymph nodes were palpable. A spiculated mass with microcalcification was seen on left mammography (Figure 2). Fine-needle aspiration biopsy revealed a grade II ductal carcinoma that was positive for estrogen and progesterone receptors. He had a left mastectomy with axillary clearance and postoperative local radiotherapy. He was given oral tamoxifen, 20 mg daily.

At breast cancer staging, no metastatic disease was detected in the liver, bone marrow, or chest. Therefore, the presumed ocular diagnosis of a choroidal secondary was questioned. No ocular treatment was undertaken, but the patient was reviewed by the oculoclonal service after his mastectomy. The right choroidal mass was found to have completely regressed to a flat, atrophic chorioretinal scar following 4 months of treatment with systemic tamoxifen (Figure 3).

Comment. Breast cancer in men accounts for less than 1% of all male cancers and less than 1% of all diagnosed breast cancers. Visual symptoms from choroidal metastases are rarely the initial manifestation of primary breast carcinoma, even in women.¹

Male breast cancer differs from female breast cancer in many ways. The average age of the male patients at diagnosis is 60 years (10 years older than women). Expression of estrogen, androgen, and progesterone steroid receptors is higher
in men than in women. Therefore, hormonal manipulation with tamoxifen (a nonsteroidal estrogen antagonist) constitutes an essential part of adjuvant therapy for metastatic disease.

Choroidal metastases respond well to treatment with radiotherapy.\(^2\) Treatment options for a choroidal metastasis include external beam radiotherapy (4000 rad [40 Gy] administered in 20 fractions) and brachytherapy. External beam radiotherapy is generally preferable to brachytherapy when there is a risk of visual deterioration. However, radiation adverse effects can include cataract formation, skin changes, lash loss, dry eye, and potential radiation retinopathy and optic neuropathy. In contrast with systemic tamoxifen, radiation does not control other potential metastatic lesions, which are very likely to exist and may not be clinically detectable. Systemic tamoxifen has significant advantages over localized radiation treatments, given the traditionally poor survival rate of such patients.

Systemic chemotherapy for metastatic breast cancer disease has been shown to induce regression of choroidal metastasis, preserving vision and allowing in vivo monitoring of the success of chemotherapy.\(^3\) To our knowledge, this is the first report of tamoxifen-induced regression of a choroidal metastasis from a breast primary in a man. The hormone receptor–positive choroidal metastasis showed complete regression while systemic tamoxifen was administered, allowing preservation of the vision. Tamoxifen has been reported to induce regression of cerebral metastases in a man with metastatic breast cancer.\(^4\) Regression was seen after 6 months of treatment with 20 mg of tamoxifen daily.

It is very unusual to have a clinically solitary ocular metastasis without liver or lung involvement. In this case, the ocular diagnosis was in doubt; however, observation of the effect of systemic tamoxifen on the tumor was helpful in confirming the diagnosis of a metastatic breast deposit.

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