Bilateral choroidal metastases as an initial manifestation of small-cell carcinoma of the lung

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ÖZET

Küçük hücreli akciğer karsinomunda başlangıç bulgusu olarak bilateral koroidal metastaz

Primer neoplazmların başlangıç anında semptomatik intraoküler metastaz şeklinde ortaya çıkışı nadir bir olaydır. Kötü prognoza işaret etmesinden dolayı metastatik oküler tümörlerin fark edilmesi önemlidir. Erken teşhis ve tedavi bu hastalarda yaşam kalitesini belirgin olarak düzeltebilir. İki haftadır devam eden sol taraflı intraoküler ağrı, görme bulanıklığı ve baş ağrısıyla başvuran ve bu bulguların primer küçük hücreli akciğer kanserinin metastazına bağlı geliştiği anlaşılan 48 yaşındaki olgu sunulmuştur.

Anahtar Kelimeler: *Koroidal metastaz, akciğer kanseri, küçük hücreli.*

SUMMARY

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The occurence of clinically symptomatic intraocular metastases as an initial manifestation of primary neoplasm is rare event. The recognition of metastatic ocular tumors is important since they indicate a poor prognosis. Prompt diagnosis and treatment can significantly improve the quality of life for these patients. We report the case of a 48-year-old man presenting with a two-week history of left sided intraocular pain with blurring of vision and headache, which are the first signs of small-cell lung carcinoma.

Key Words: *Choroidal metastases, lung cancer, small-cell.*

Choroidal metastases are recognized as the most common intraocular malignancy (1-5). Metastatic choroidal tumors usually occur in patients with disseminated disease and indicate a poor prognosis. They are most prevalent in female patients with breast cancer and male patients with lung cancer. The incidence of metastatic tumors as a cause of symptomatic disease has been reported to be 1% to 3% (1). Approximately one third of these patients have no history of primary cancer at the time of ocular diagnosis (2,3,6). The primary site was discovered after complete oncologic evaluation in nearly half of the patients (2). Lung cancer is the most common primary tumor detected in these patients (3).

We report here a patient presenting with a two-week history of left-sided intraocular pain with blurring of vision and headache, which are the first signs of small-cell lung cancer (SCLC).

CASE REPORT

A 48-year-old man presented to the Department of Ophthalmology at the University of Trakya complaining of left-sided intraocular pain with blurring vision and headache. He had smoked one pack of cigarettes daily for thirty years. The physical examination was normal except for a left superior hemispheric defect in the visual field of his left eye and diminished respiratory sounds at the left lung base. Laboratory results were normal.

Funduscopy revealed an exudative retinal detachment in the inferior hemifield of the left eye and elevated retina in the temporal quadrant of the right eye. Visual acuity was 10/10 in right eye and counting fingers in left eye. Fluorescein angiography showed hypofluorescence in the arterial and early venous phases and this hypofluorescence continued throughout the late phases. Vascular structure was normal and a lobulated solid lesion and overlying retinal detachment were observed in the inferior quadrant (Figure 1).

Magnetic resonance imagines (MRI) of the orbits revealed T1-weighted isointense nodular thickening compared to the extraocular muscles in the left globe and en plaque thickening in the right one (Figure 2a). Contrast enhanced T1-weighted image showed enhancement of lesions (Figure 2b). Bilateral vitreous intensities were homogen and periorbital fat tissues were intact. Extraocular muscles and optic nerves were normal. All lesions were hypointense compared to vitreous (Figure 2c).

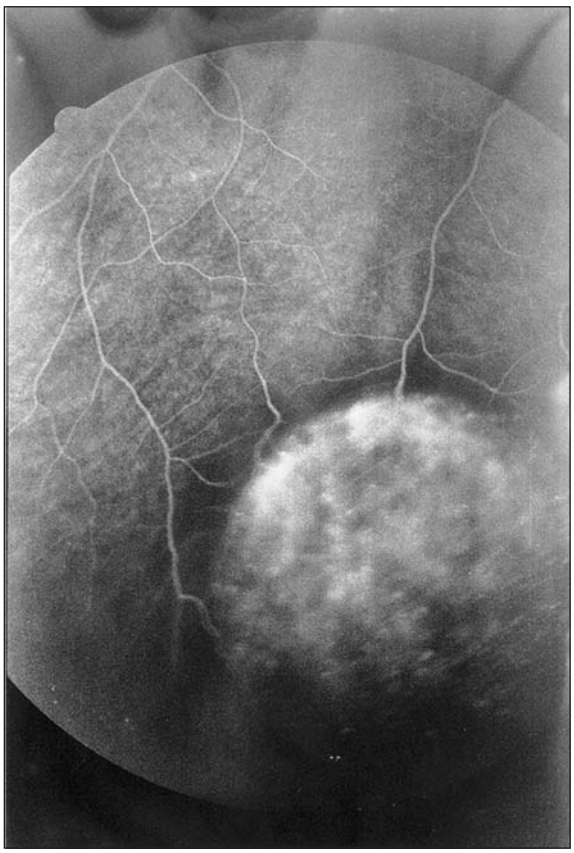

Figure 1. Lobulated solid lesion and overlying retinal detachment in the inferior hemifield in fluorescein angiography.

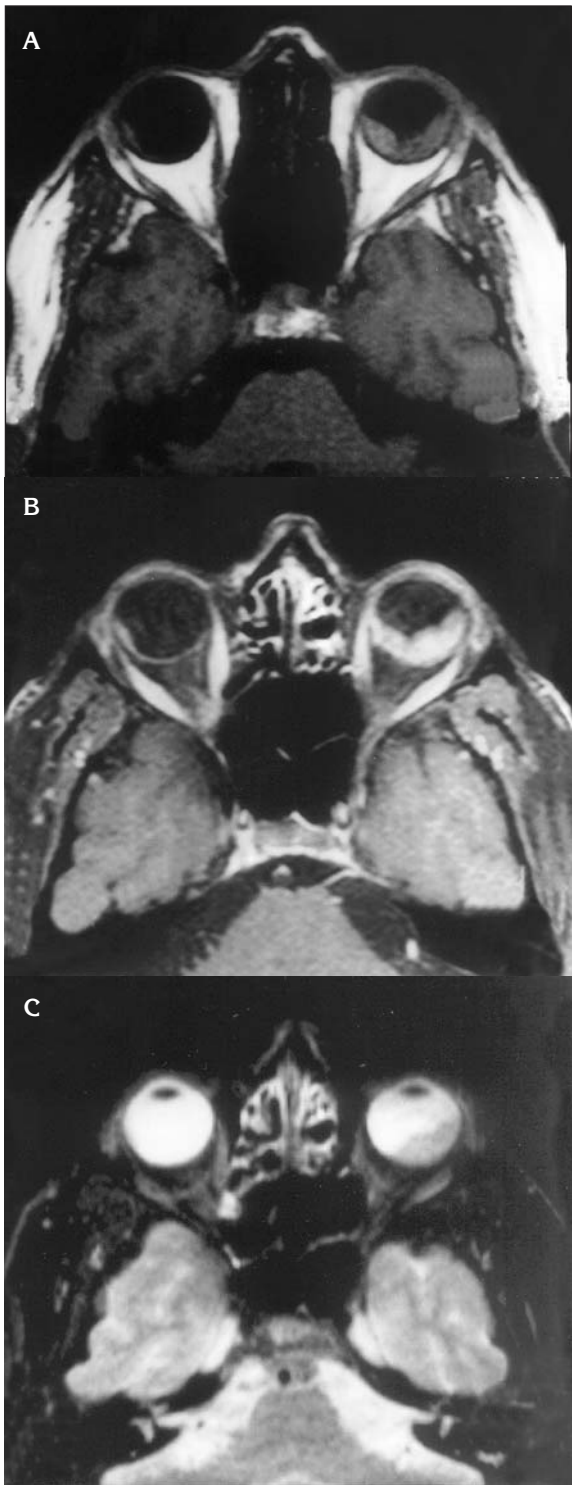

Figure 2. Axial T1 weighted image reveals nodular thickening in the left globe and en plaque thickening in the right globe (a) and contrast enhanced T1 weighted image shows enhancement of lesions (b). T2 weighted axial image demonstrates hypointense lesions compared to vitreus and isointense compared to extraocular muscles (c).

All these findings and clinical evaluation of the patient suggested uveal metastases from carcinoma of an unknown primary. A chest X-ray revealed the non-homogen opacity in the left paracardiac and perihilar region that was suspected of being a primary bronchogenic carcinoma. A computed tomography scanning of the chest demonstrated the presence of a left perihilar mass, mediastinal lymphadenopathy, and a peripheral nodule in the right lung parenchyma. Multiple small masses were observed in the liver. Fiberoptic bronchoscopy showed the presence of an intrabronchial tumor in the left lingula with a complete obstruction and bronchoscopic biopsy revealed the presence of abnormal histology, consistent with SCLC.

Because of the presence of disseminated disease, the patient was given chemotherapy with cisplatin (75 mg/m^2 every three weeks) and etoposide (100 mg/m^2 every three weeks). He was referred to our department and a course of palliative irradiation was given with a cobalt-60 beam using two lateral fields with lens-sparing technique. The total dose given was 36 Gy in 12 daily fractions. During the period of radiotherapy, pain relief was achieved and the blurred vision improved after the treatment was completed. After 3 cycles of chemotherapy the patient refused to continue treatment and died from disseminated disease six months after the diagnosis.

DISCUSSION

Autopsy studies confined to the examination of the globe in patients who died of cancer estimate the incidence of intraocular metastases to be 9% to 12%. However, the incidence of metastatic tumors as a cause of symptomatic disease has been reported to be less than 5% (1). Approximately one third of these patients have no history of primary cancer at the time of ocular diagnosis and a quarter of them have bilateral lesions. The primary site is not discovered in nearly half of the patients although complete oncologic evaluation (2). Lung cancer is the most common primary tumor detected in patients with no neoplasm at the time of ocular diagnosis (3).

The lung is the second most common primary site after the breast and Goldberg reported an 11% incidence in 1990 (2). Kreusel et al. reported that the presence of metastasis in at least two other organs is a risk factor for choroidal

metastasis (5). In their series, 7.1% of patients with lung cancer develop choroidal metastasis and a mean survival of two-months after the diagnosis of metastasis. The metastases from lung cancer are unifocal and unilateral more often than breast cancer metastases and the most characteristic feature of these metastases to the uvea is the likelihood of the uveal tumor presenting before the discovery of the lung cancer (2,3).

The uveal tract is the most common site of ocular and adnexal metastases. The increased incidence in posterior choroidal lesions may be due to easier diagnosis, as these lesions are more likely to be symptomatic than anterior lesions (3,7). Patients with metastatic tumors to the posterior uvea most generally present with decreased visual acuity. The second most common symptoms are field defects and floaters. Retinal detachment is a commonly associated finding, which may occur in up to 90% of patients (3,7).

The diagnosis of ocular metastases is based primarily on clinical findings supplemented by imaging studies. The diagnostic procedures include ultrasonography, fluorescein angiography, computed tomography/MRI, fine-needle aspiration, or wedge biopsy. Brain imaging is useful before initiation of radiotherapy to assist in treatment planning. Mevis and Young reported that 22% of patients diagnosed with choroidal metastasis had a concurrent diagnosis of central nervous system metastasis (8). Differential diagnosis includes primary choroidal melanomas, benign lesions such as haemangioma, and inflammatory granulomas. It is very important to distinguish between metastatic disease and primary malignant uveal melanoma. Metastatic lesions are often bilateral, minimally elevated, and multifocal. They generally appear as a creamy yellow subretinal mass, often with a secondary retinal detachment (2,7). MRI can also provide some useful information. Primary melanomas exhibit distinctive high signal intensity on T1 images but this finding is not observed when imaging metastatic choroidal tumors (9). In our case, biopsy of the intraocular lesions was not attempted because clinical evaluation and the opthalmoscopic appearance of the lesion suggested uveal metastasis.

Treatment options include radiotherapy, chemotherapy, resection, enucleation, and observation. In patients with metastatic cancer to the choroids, the most appropriate treatment seems to be a course of external beam radiation therapy. Though palliative, radiotherapy can provide a high response rate (63-89%), resulting in symptom relief and vision improvement (4). There are few reports about the response of choroidal metastasis to systemic chemotherapy and hormone therapy. Demirci et al. observed an 81% tumor control rate after systemic chemotherapy in affected patients (6). Letson et al. evaluated the response to systemic chemotherapy in eight eyes with uveal metastasis from breast cancer (10). They noted that visual acuity improved in four eyes, remained stable in three eyes, and decreased in one eye.

Ocular metastasis can be the initial manifestation of lung cancer. A detailed systemic evaluation is warranted if a metastatic tumor is suspected. Radiological imaging studies including chest X-ray may be useful and prompt diagnosis and treatment can significantly improve the quality of life for these patients.

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