Metastatic lung cancer; presenting with ocular symptoms

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ÖZET

Oküler semptomlarla ortaya çıkan metastatik akciğer kanseri

Kırksekiz yaşında erkek hasta kliniğimize görme bozukluğu ve sol gözde ağrı yakınmaları ile başvurdu. Olgunun daha önceden bilinen sistemik bir hastalığı yoktu. Orbital manyetik rezonans görüntüleme metastatik lezyon varlığını ortaya koysdu ve ileri incelemede primer akciğer kanseri tespit edildi.

Anahtar Kelimeler: Akciğer kanseri, göz metastazı, manyetik rezonans görüntüleme.

SUMMARY

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A 48 year-old man, without any systemic disease, was admitted to our hospital with a complaint of decreased visual acuity and pain in his left eye. The orbital magnetic resonance imaging revealed metastatic lesions and further evaluations disclosed a primary lung cancer.

Key Words: Lung cancer, ocular metastasis, magnetic resonance imaging.

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Intraocular metastases from solid tumors were formerly thought to be an extremely rare condition, but most studies have shown that intraocular metastases can be found in more than one third of patients with disseminated breast cancer and a slightly lower incidence is found in patients with primary lung or gut carcinoma (1-3). However, in the English literature, there are few clinical reports. The incidence of uveal metastasis from lung cancer is much higher at autopsy than in clinical series. Because of this fact, we believe that the clinicians dealing with lung cancer should be aware of the possibility of ocular metastasis of lung cancer. Here, we present a patient with eye metastasis as the first symptom of broncogenic adenocarcinoma and a short review of the relevant literature.

CASE REPORT

A 48-year-old white man was admitted to our hospital with a complaint of pain in his left eye and decreased visual acuity going on for a two-weeks period. On ophthalmologic examination, total retinal detachment and choroidal metastatic lesions were observed and an orbital magnetic resonance imaging (MRI) was carried out. On MRI examination, left globe was hyperintense on T₁-weighted images due to retinal detachment on the site of a subretinal effusion. T₂-weighted images demonstrated two metastatic lesions which were located on medial and lateral walls of the left bulbus oculi. The signal intensity of the lesions was iso-hyperintense to extraocular muscle on T₂-weighted images. Fat suppressed gadolinium-enhanced T₁-weighted images showed the lesions as strongly enhancing masses (Figure 1).

The patient was evaluated with a routine chest X-ray and a right hilar mass was detected. He was a current smoker but had no pulmonary complaints (Figure 2). Thorax computerized tomography (CT) verified the right hilar mass and multiple mediastinal lymphadenopathy, so a bronchoscopic examination was performed (Figure 3). On bronchoscopic examination, an endobronchial lesion in the lower inferior lobe bronchus was seen and biopsies were taken. The biopsies were reported as undifferentiated adenocarcinoma. The patient was systematically searched and no other metastatic lesion was detected. Orbital radiotherapy was initiated to decrease the pain and get some vision if possible.

DISCUSSION

Since the first cases of metastatic carcinoma to the eye were described about 100 years ago, varying estimates have been made about the incidence of ocular metastases (1). The first complete postmortem examination of the eyes of patients with known systemic carcinoma was performed by Bloch in 1971 (1). In this study, among the 230 patients studied 12% were found histologically to have metastatic foci. This study changed the idea that metastatic intraocular cancer was such a rare disease that few ophthalmologists had ever seen more than a single ca-
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And currently, there is a consensus that metastatic tumors represent the most common type of intraocular malignancy (1-4).

The incidence of ocular metastases varies from 4% to 12% depending on the design of the studies and lung cancer is the second most common primary site of ocular metastases following the breast cancer (1,2,5,6). These data show the frequency of ocular metastases in autopsy series. However, there are few clinical reports about lung cancer metastatic to the eye. Eleven cases of ocular metastases of lung cancer has been published in eight reports in English literature (7). According to these reports, in nine cases symptoms due to eye metastasis were the initial findings of the illness, as it was in our case. In only two of them, ocular metastases were detected subsequently. On the other hand, Shields and et al., in their retrospective study, reported that as many as two thirds of patients with intraocular disease had a prior history of cancer (6). These contradictory results make us think that as clinicians dealing with lung cancer, we may not be detecting most of the eye metastases of lung cancer.

Metastatic tumor to the uvea is the most common form of an intraocular metastatic process and choroidal tumors represent 80% to 90% of these lesions. In choroidal metastases, the most common symptom is painless loss of vision. Other presenting symptoms have been described, including photopsias, floaters, pain, redness, field defect and diplopia. Up to 10% of patients may be asymptomatic (6).

The differential diagnosis of a choroidal metastasis includes choroidal amelanotic nevus, amelanotic uveal melanoma, choroidal hemangioma, choroidal osteoma, posterior scleritis and choroidal granuloma. Perhaps the most difficult differential diagnosis involves distinguishing a primary amelanotic melanoma from a metastatic lesion. The color, shape and vascular pattern of the lesion are the important clues in differentiating these two kinds of tumors. Amelanotic melanomas frequently have large, visible vessels, and may present with a collar button or mushroom shape following rupture through Bruch’s membrane. The growth rate of melanomas is slower than that of metastatic lesions and the associated retinal detachments are smaller. Choroidal metastasis are classically homogeneous, creamy yellow to yellow-white subretinal lesions. They take on a flat or dome-shaped configuration with discrete borders and are often associated with a secondary serous retinal detachment. Multiple lesions may be identified, ranging in sizes of 7 to 10 mm in basal diameter. Metastases from bronchial carcinoid tumors and renal cell tumors commonly have an orange pigmentation (8).
MRI is the imaging modality to demonstrate metastatic lesions of the bulbus oculi. The mottled appearance and diffuse outline of the metastatic lesions can be rather distinctive from uveal lesions. Use of intravenous gadolinium increases the sensitivity of MRI for detection of metastases.

Intraocular tumor biopsy is usually not recommended since it may potentially seed malignant cells. It should be considered only under special circumstances. It can be performed to a patient with lesions thought to be metastatic but in whom a primary lesion can not be found despite an extensive systemic evaluation or to a patient who has a lesion with major diagnostic uncertainty (7).

Choroidal metastatic lesions can enlarge rapidly. Appropriate treatment should be initiated to preserve vision and improve the quality of life. Depending on the health of the patient and the status of his or her malignancy, this may take various forms. Radiation is perhaps the most commonly employed therapy for these patients. Response to radiotherapy is often quite good. A response rate ranging from 63% to 89% can be obtained. Following treatment, the choroidal lesion may show fragmentation with necrosis and pigment migration. Resolution of retinal detachments is also seen. Resection of metastatic tumors, particularly in the anterior segment, has been described, systemic chemotherapy also has been associated with tumor size reduction (8).

In conclusion, our case demonstrated that symptoms due to orbital metastasis may be the initial and the only finding in lung cancer, before the primary cancer is diagnosed. Metastatic cancer should be considered in the differential diagnosis of a choroidal mass. And since the lung cancer is the second most common primary site of ocular metastasis, ophthalmological examination of patients with lung cancer having visual symptoms is quite significant. The detection of such of ocular metastases can give an opportunity to treat these lesions with radiotherapy or chemotherapy or both and helps preserving the vision and maintaining the quality of life.

REFERENCES