Acta Scientific Ophthalmology (ISSN: 2582-3191)

Volume 4 Issue 8 August 2021

Case Report

Different Approach to Oculomotor Nerve Palsy

Mehmet Egemen Karataş* and Gamze Karataş

Department of Ophthalmology, Osmaniye State Hospital, Osmaniye, Turkey

***Corresponding Author:** Mehmet Egemen Karataş, Department of Ophthalmology, Osmaniye State Hospital, Osmaniye, Turkey.

Received: March 08, 2021

Published: July 14, 2021

Abstract

To remind that ocular tumors may be encountered in patients presenting with neurological complaints and to evaluate the systemic and ocular approach.

Keywords: Oculomotor Nerve Palsy; Ocular Tumors; Cancer

Introduction

Nowadays, with developments in the treatment of cancer, increase the survival rate of cancer patients, the incidence of metastases to the eye and orbit has increased. Among intraocular malignancies, metastases are one of the most common causes. For this reason, ophthalmologists should know clinical findings, diagnostic procedures, and therapeutic approaches to ocular and orbital metastases.

In a previous study, autopsy analysis of patients with ocular metastasis showed that ocular metastasis was most frequently detected in the choroid at a rate of 57% and that 43% of the metastases were originated from lung and breast [1].

The ocular metastasis rate of the patients with lung cancer as the primary tumor was 2 - 6.7% [2]. Therefore, although rare for patients with lung cancer, the first symptom or finding may be a decrease in visual acuity.

In this study, we described a patient who was diagnosed with small cell lung cancer who had ophthalmological and neurological symptoms at onset.

Case Presentation

A 47-year-old male patient was referred to Osmaniye State Hospital Emergency Service Department with a complaint of decreased visual acuity in the left eye for 1 week and sudden ptosis in the same eye for 3 days. There were no systemic findings in the patient's medical history except for 30 pack-year histories of smoking. Direct and indirect light reflexes in both eyes were normal. The relative afferent pupillary defect was not detected. There were no abnormalities of eye movements in the right eye, but in the left eye, movements of the eye were districted particularly to inferior and to medial direction. BCVA is 20/20 in the right eye and 6/20 in the left eye. Examination of the anterior segments of both eyes was normal except for the ptosis in the left eye. Intraocular pressure was 14 mmHg in both eyes. Examination of the fundus was normal in the right eye. In the left eye, it is detected that there was a choroidal mass adjacent to the optic disc and a subretinal fluid accumulation that includes the macular area. Besides that, there were lots of changes in the retina pigment epithelium on the posterior pole. The ptosis and the restricted eye movements of the left eye in this patient were found to be related to partial 3 CN palsy. A decrease of BCVA in the left eye was associated with the location of the choroidal mass and the existence of subretinal fluid. Left 3 CN palsy and a choroidal mass in the left eye were detected in this patient and fundus photography, OCT, USG and orbital MR examinations were performed to investigate the pathology which caused those symptoms and after those examinations results, the patient was directed to the relevant clinical departments for systemic and neurological investigation.

According to the ophthalmologic examination of the patient and OCT imaging, we thought that it was the finding of an ocular metastasis. And multiple nodal foci were observed in the Cranial MR of the patient which partially restricted the cerebral diffusion in both cerebral hemispheres. Those foci were interpreted in favor of parenchymal metastasis of the brain. Thorax CT scan result was found to be compatible with small cell lung cancer. Systemic metastases other than cranial and orbital ones were not observed in the whole body scan. The patient was referred to the Chest Diseases Clinic for his primary tumor and systemic chemotherapy was planned. External radiotherapy was planned by Radiation Oncology Clinic with the recommendation of the Neurology Clinic for multiple cranial metastases.

Figure 1: Fundus photography.

Figure 2: OCT image.

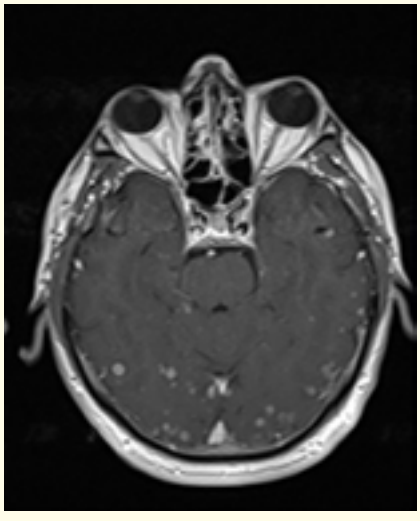

Figure 3: Cranial MRI image.

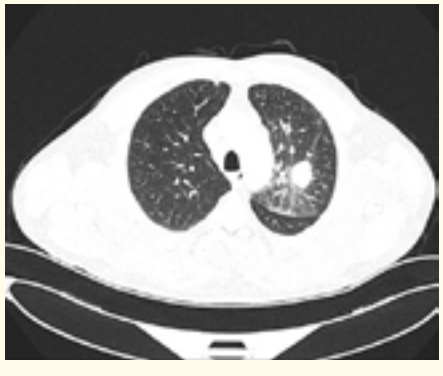

Figure 4: Thorax CT image.

Discussion and Conclusion

Metastases of globes and orbit are very rare in invasive tumors. In a study, metastases of globes or orbit were detected in only 10 of the 213 patients whose location of primary tumors was known [3]. Intraocular metastases are most commonly seen in the choroid [1]. Most of the choroidal metastatic lesions occur on the posterior pole. This situation is explained by greater blood flow on the posterior pole than the other locations of the globe [4]. In our case, there was a solitary lesion along the superior temporal vascular arc on the posterior pole of the left eye.

In another study, 21% of cases, applied with the symptoms such as the decrease in visual acuity who we detected choroidal metastases in their eyes, were diagnosed as lung cancers and 47% were breast cancer [5].

Patient survival is not more than 6 months in choroidal metastases of primary pulmonary cancer. Ocular metastases occur in the context of hematogenous spread and their treatment is palliative [6]. The purpose of treatment is to increase and maintain the quality of life. In choroidal metastatic tumors, lots of treatment methods are applied such as laser photocoagulation, cryotherapy, chemotherapy, radiotherapy, surgical resection, enucleation, photodynamic therapy [7,8]. In the study of Demirci and his colleagues, the patients who had choroidal metastases, were treated with systemic chemotherapy, and had a tumor control rate of 81% [9]. We thought that it would be effective in our patient, we started chemotherapy on the advice of Chest Diseases and Oncology Clinics. The treatment of our patient is still ongoing. The brain is the most common metastases location of lung cancer [10]. In the autopsy series, brain metastases were detected in 17-55% of the patients diagnosed with lung cancer [11]. According to diagnostic tests which were done, the metastasis rate was found as 3.3 - 26.2% [12]. Intraocular tumors were unlikely to affect the cranial nerves, we thought that our patient had intracranial pathologies because of the symptoms he had such as 3 CN palsy, decreased visual acuity, and choroidal mass. For this reason, a detailed ophthalmological examination is recommended for cranial nerve paralysis. There is also no standardized approach to the treatment of small cell lung cancer cases which is chemotherapy-sensitive. Lee and colleagues reported a response rate of 82% in brain metastases and 75% in extracranial metastases when they were treated by chemotherapy [13]. Since chemotherapy and radiotherapy have similar survival times and systemic therapy will control the entire disease, chemotherapy should be tried first and cranial radiotherapy should be applied if no response is obtained to chemotherapy [13,14]. However, since there is no randomized study in this issue, radiotherapy is also often used in cases. In our study, a multidisciplinary approach with chemotherapy and cranial radiotherapy to our case was suggested.

Although iris and uveal metastases respond well to radiotherapy, chemotherapy, and surgical treatment, survival rates after treatment are poor due to underlying primary malignancies. Uveal-choroidal metastases are usually detectable in cancers with systemic metastases [15]. If choroidal metastases are detected first, as in our case, systemic screening should be performed. Usually, these metastases are associated with cranial metastases. In our case, diffuse multiple cranial metastases were causing neurological complaints.

As a result, it should not be forgotten that systemic malignancies can be detected with detailed neurological and ophthalmological examinations.

Bibliography

1. Bloch RS and Gartner S. "The incidence of ocular metastatic carcinoma". *Archives of Ophthalmology* 85 (1971): 6735.

2. Kreusel KM., *et al.* "Choroidal metastasis in disseminated lung cancer: frequency and risk factors". *American Journal of Ophthalmology* 134 (2002): 445-447.

3. Albert DM., *et al.* "Tumor metastasis to the eye. I. Incidence in 213 adult patients with generalized malignancy". *American Journal of Ophthalmology* 63 (1967): 723-726.

4. Ferry AP and Font RL. "Carcinoma metastatic to eye and orbit: a clinicopathologic study of 227 cases". *Archives of Ophthalmology* 92 (1974): 276-286.

5. Shields CL., *et al.* "Survey of 520 eyes with uveal metastases". *Ophthalmology.* 104 (1997): 1265-1276.

6. Fernando AJ., *et al.* "Optical coherence tomography. Characteristics of choroidal metastasis". *Ophthalmology* 122 (2005): 1612-1619.

7. Augsburger JJ and Guthoff R. "Metastatic cancer to the eye". In: Yanoff M, Duker JS, eds Ophthalmology. 2nd ed. St. Louis: Mosby (2003): 1064-1069.

8. Harbour JW. "Photodinamic therapy for choroidal metastasis from carcinoid tumour". *American Journal of Ophthalmology* 137 (2004): 1143-1145.

9. Demirci H., *et al.* "Uveal metastasis from breast cancer in 264 patients". *American Journal of Ophthalmology* 136 (2003): 264-271.

10. Davis PC., *et al.* "Diagnosis of cerebral metastases: Double-dose delayed CT vs contrast-enhanced MR Imaging". *American Journal of Neuroradiology* 12.2 (1991): 293-300.

11. Salvatierra A., *et al.* "Extrathoracic staging of bronchogenic carcinoma". *Chest* 97.5 (1990): 1052-1058.

12. Tigin C., *et al.* "The role of computed tomography in the detection of brain metastasis in non-small cell lung cancer". *Medical Bulletin of Heybeliada* 9 (2003): 16-18.

13. Lee JS., *et al.* "Primary chemotherapy of brain metastasis in small-cell-lung cancer". *Journal of Clinical Oncology* 7 (1989): 916-922.

14. Veslemes M., *et al.* "Outcome of patients with brain metastases after combined modality therapy in small cell lung cancer: A retrospective study". *The Journal of Chemotherapy* 7 (1995): 460-462.

15. De Potter P., *et al.* "Uveal metastasis from prostate carcinoma". *Cancer* 71.9 (1993): 2791-2796.

Volume 4 Issue 8 August 2021