Journal of Experimental and Clinical Medicine
https://dergipark.org.tr/omujecm

Case Report

J Exp Clin Med
2023; 40(1): 191-193
doi: 10.52142/omujecm.40.1.37

Lung cancer and choroidal metastase

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Received: 26.09.2022 • **Accepted/Published Online:** 09.02.2023 • **Final Version:** 18.03.2023

Abstract

Sixty-nine-year-old male patient, having treatment after one month due to lung adenocancer, was admitted to our clinic with the complaint of blurred vision in the left eye. Fundoscopy examination revealed irregular macula in both eyes and metastasis in both eyes choroid in Optical Coherence Tomography (OCT). In our case, it was observed that although both eye choroids had metastasized, the complaints of the eyes were lost with radiotherapy. In this case, a patient who developed eye metastases during the follow-up of lung cancer after completion of chemotherapy is presented. The patient with eye metastases improved after radiotherapy.

Keywords: lung neoplasms, choroid, radiotherapy, metastasis

1. Case

Our case was a 69-year-ol male patient who had no complaints other than cough. In the computerized tomography (CT) taken incidentally, an enlarged lymph node in the right peribronchial, subcarinal, right anterolateral subpleural 10 mm spicular extension, irregular nodule was observed (Fig. 1). A diagnosis of adenocarcinoma was made as a result of biopsy taken from the lymph nodes by mediastinoscopy. The patient with T1b N2 M0 (Stage 3A) did not have EGFR, ALK, ROS-1 mutations. The patient was initially treated with paclitaxel and carboplatin chemotherapy with curative radiotherapy (RT) a total dose of 61.2 Gy to the primaries and lymph nodes in our clinic. He was admitted to our clinic with the complaints of increased dyspnea and blurred vision in his left eye 24 months after the end of his treatment. In the fundoscopy examination in the Ophthalmology clinic, macular irregularity was observed. Multiple masses in both eyes were evaluated as metastasis to the choroid in Optical Coherence Tomography (OCT) (Fig. 2). At the same time, Positron Emission tomography (PET-CT) showed high FDG (SUV max: 8,31) uptake in the mass in the right hilar region, pleural effusion and metastases to the adrenal and bone (Fig. 3).10 x 3 Gy radiotherapy to both eyes with volumetric intensity modulated arc radiotherapy (VMAT) technique for 10 days treatment. It was observed that the eye complaints disappeared after the treatment. An improvement in the appearance of metastases was observed with control OCT (Fig. 4). The patient's visual impairment improved after radiotherapy applied to the eye and carboplatin paclitaxel chemotherapy was continued. Informed consent form was obtained from the patient and patient relatives in that case reports.

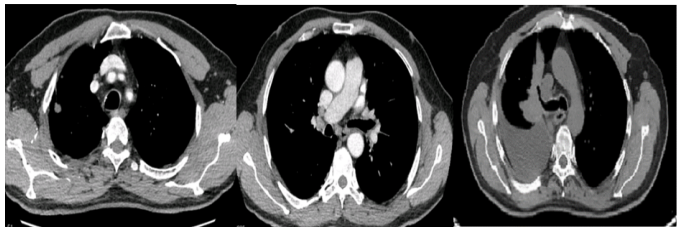

Fig. 1. Right peribronchial, subcarinal enlarged lymph node, right anterolateral subpleural 10 mm spicular extension, irregular nodule

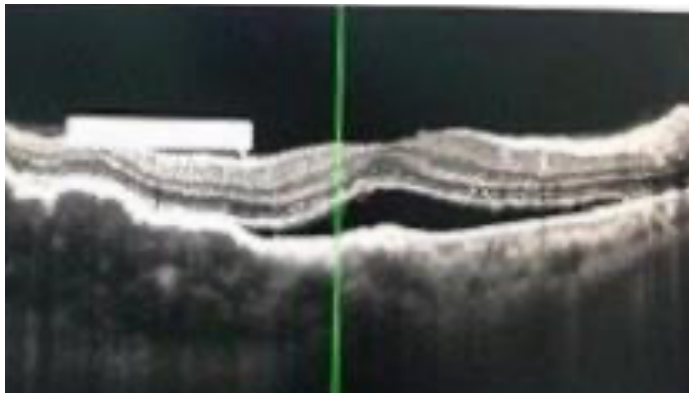

Fig. 2. Optical Coherence Tomography (OCT) image of choroidal metastasis

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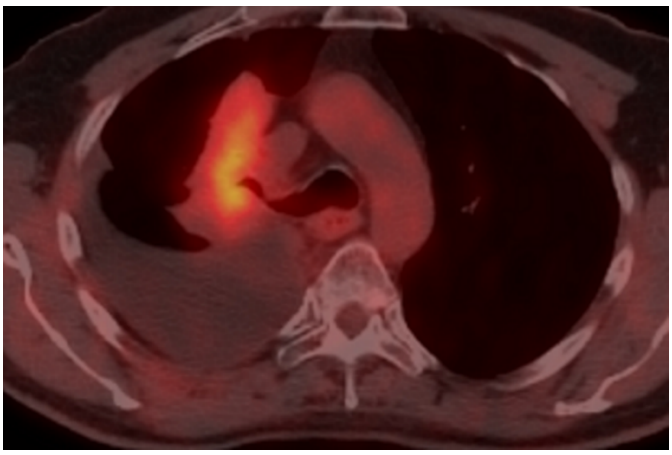

Fig. 3. High FDG uptake (Suv max :8.31) in the mass in the right hilar region and pleural effusion in positron emission tomography (PET-CT)

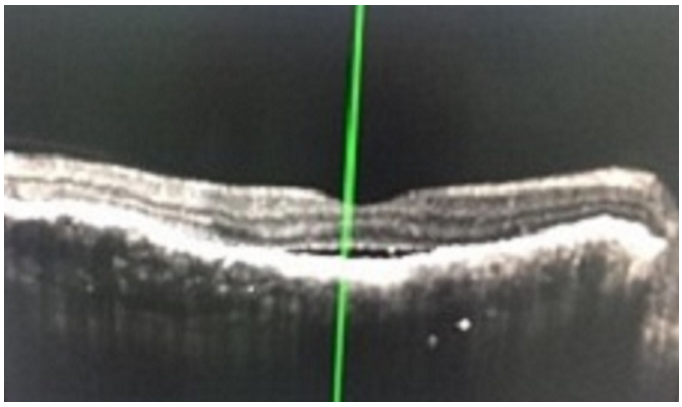

Fig. 4. Improvement in metastasis appearance with control OCT

2. Discussion

The majority of eye cancers develop from metastases of other organs to the eye.

It is quite rare, and its frequency has been reported to have increased in recent years. Choroidal metastasis; is more common than iris and ciliary body metastases (1). The number of studies evaluating the incidence of choroidal metastasis due to lung cancer is few, and the incidence of choroidal metastasis varies between 0.1-7%(2). Lung cancer, which metastasizes most frequently into the eye, is reported to be the histopathological type of adeno cancer in 41% (3).

The uveal system is the part of the eye where metastases are most common. In the uvea, the choroid (88%) is the most affected area, followed by the iris (9%) and the ciliary body (2%). Although the exact cause is not known, the high vascularity in the region may explain this situation (4-5). Lung cancer is responsible for 30% of metastases to the choroid (6). It is more common for choroidal metastases. It is more common for choroidal metastases to involve the eye as multiple foci and 20-40% of them are bilateral (7).

The majority of patients have symptoms of lung cancer. Eye metastases are usually seen in advanced stages of cancer. Presence of metastases in at least one or more organs other than the eye is common (8). The most common metastases are seen in the brain, kidney, and liver adrenal. At the time of presentation with ocular symptoms, the patient also had adrenal and bone metastases (9). In our case, the presence of metastasis in both eyes and the absence of symptoms in the other eye is due to the fact that the metastasis remained silent in that eye. It has been reported in fewer cases that patients without a diagnosis of lung cancer initially presented with ocular symptoms. In general, symptoms of blurred vision, pain, floaters, eye redness, epiphora, diplopia are seen. Our case, on the other hand, applied to our clinic with the complaint of blurred vision in the left eye after the end of the lung cancer treatment, but on examination, metastasis was found in both eyes.

Radiological methods such as OCT, fluorescence angiography of the fundus, CT, orbital MR ultrasonography, PET imaging are useful in the diagnosis of these metastases. OCT is more sensitive than ultrasonography in the evaluation of small metastases. Features of metastasis may include anterior compression, irregularity and posterior shadowing. In retinal involvement, retinal pigment epithelial abnormalities and subretinal fluid are found (10).

Purpose of treatment; to maximize the patient's quality of life and to restore or preserve vision. A multisystemic approach to the treatment of the disease is very important. Treatment can be systemic or local. Chemotherapy can be used in systemic treatment. However, there are no definite conclusions about its usefulness.

There are some studies in the form of more case reports, especially on adenocarcinoma, and it is reported that it responds well to various chemotherapies. In particular, tyrosine kinase inhibitors such as bevacizumab, gefitinib, erlotinib, crizotinib and pemekrexet are more effective chemotherapy drugs in adenocancer (10, 11).

However, in our patient EGFR, ALK, ROS-1 were negative, drugs mentioned in the literature could not be administered at the beginning of the disease and after metastasis developed. Systemic treatment is more preferred than local treatment because complications such as local infections, xerophthalmia and cataract formation are rare. Radiotherapy, enucleation, systemic steroids, less frequently transpapillary thermotherapy and vitreous bevacizumab are used in local treatment. It has been reported that good results will be obtained especially when bevacizumab is given intravitreal together with systemic treatment (12).

Surgery does not play an important role in treatment, as surgery has a high morbidity potential.

Radiotherapy is usually the most important form of local treatment applied when lesions do not respond to systemic therapy. In many studies, radiotherapy to the eye between 20 and 50 Gy is widely used and provides symptomatic relief by controlling tumor growth. Although External Beam

Radiotherapy (EBRT) is the most widely used technique in the treatment of choroidal metastases; newer modalities such as plaque brachytherapy, proton beam therapy, and stereotactic radiosurgery can be used.

External Beam Radiotherapy (EBRT), first applied in 1979, is a widely used treatment modality for uveal metastases that do not regress despite systemic therapy (13). There are many studies indicating that EBRT is very beneficial in the treatment of patient symptoms and life expectancy. The improvement in visual functions is more permanent due to the higher dose of EBRT compared to other radiotherapies. If the applied RT dose is more than 32 grays, a faster response to the treatment is observed and the symptoms improve significantly. Our case responded well to 3 Gy radiotherapy for 10 days visual acuity increased. The patient showed response to both palliative radiotherapy and subsequent chemotherapy. In choroidal metastases, survival time may vary depending on the primary tumor type and local spread of the tumor. The prognosis of patients who develop choroidal metastases due to lung cancer is generally poor and the average life expectancy is reported to be 7-12 months (14). The survival of the patient in choroid metastasis with lung primary is no more than six month (15).

In patients with a diagnosis of lung cancer, if there are ocular symptoms, metastasis to the choroid should be considered. Choroidal metastases have a poor prognosis. Primary choroidal melanoma, haemangioma, inflammatory granuloma can be the differential diagnosis. Treatment options should be reviewed in order to improve visual function and improve quality of life in these patients. A multidisciplinary approach seems important for the treatment and follow-up of patients. In conclusion, radiotherapy should be considered as another treatment option in patients with lung adenocarcinoma who do not respond to chemotherapy.

Conflict of interest

None to declare.

Funding

None to declare.

Acknowledgments

None to declare.

Authors' contributions

Concept: F.S.A, Design: F.S.A, Data Collection or Processing: F.S.A., M.Ü., A.S., Analysis or Interpretation: F.S.A., M.Ü., A.S., Literature Review: F.S.A., M.Ü., Writing: F.S.A.

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