

Iris Metastasis in a Patient With Small Cell Lung Cancer: A Case Report

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Abstract

Introduction: Small cell carcinoma constitutes the most aggressive type of lung cancer, with the greatest propensity for early disseminated disease. Although commonly neglected due to its rarity and the presence of other comorbidities, cases of iris metastasis from small cell lung cancer have been reported in the literature.

Case Presentation: We present the case of a 76-year-old female. Once diagnosed, the patient already had disseminated disease with metastatic foci found in the spleen, liver, and brain. The patient received six cycles of combination carboplatin/etoposide chemotherapy, followed by cranial irradiation. After an initial response, two months after the completion of cranial irradiation, the patient complained of visual impairment and was referred to an ophthalmologist. A diagnosis of secondary glaucoma was made, caused by metastasis to the left iris.

Conclusions: Physicians should be aware of this rare site of metastasis. Early diagnosis is of paramount importance in order to effectively prevent the significant morbidity this condition can cause if left untreated.

Keywords: Iris, Lung, Carcinoma, Neoplasms

1. Introduction

Small cell lung cancer accounts for approximately 15% of lung neoplasms (1). It carries the greatest propensity for early dissemination and is accompanied by a worse prognosis compared to other histologic types. Delays in therapeutic interventions should not exceed one week due to the aggressive nature of this disease if left untreated. Despite its aggressiveness, nearly all cases respond dramatically well to chemotherapy. However, most tumors finally relapse, eventually leading to widespread disease. The most common sites of tumor metastasis involve the liver, adrenals, bone marrow and brain; however, uncommon sites can also be affected (1, 2).

Lung cancer constitutes the second most common source of metastatic intraocular dissemination, after breast cancer (3). The choroid layer is more commonly involved compared to the iris, due to the more abundant arterial distribution in the posterior chamber of the eye (3). However, despite its rarity, cases of iris metastasis from small cell lung cancer have been reported in the literature (4, 5).

2. Case Presentation

A 76-year-old non-smoking Caucasian female presented to our hospital complaining of left-sided hemiparesis. She reported a long medical history of psoriasis, and she also reported being in a chronic HCV-carrier state. A

brain CT scan showed a right-sided temporal lesion. The patient subsequently underwent neurosurgical excision of the lesion. A whole-body imaging study performed shortly thereafter revealed enlarged mediastinal lymph nodes and a lesion in the upper lobe of the left lung, indicative of malignancy. Additionally, the abdominal CT scan revealed multiple lesions in the liver and the spleen, while a post-surgery brain MRI revealed novel temporal and left occipital lesions. Histologic analysis of the tumor specimen surgically obtained from the brain revealed that the primary lesion was small cell lung carcinoma. The patient was therefore started on first-line chemotherapy with carboplatin AUC 6 plus etoposide 120 mg/m² every 21 days for 6 cycles, which successfully led to a complete response of the disease. The patient also underwent cranial irradiation, receiving a total of 30 Gy. Two months after the completion of radiotherapy, the patient complained of visual impairment and was referred to an ophthalmologist. A diagnosis was made of secondary glaucoma caused by metastasis to the left iris (Figure 1). The patient declined to receive local radiotherapy to the eye. As a result, her visual acuity gradually declined. Additionally, permanent anisocoria was observed. Whole-body reclassification exams were subsequently performed, which showed significant disease progression in the chest. The patient was entered into a

clinical trial and received oral pazopanib 800 mg once daily. However, after three months, while on the pazopanib therapy, the disease progressed and the patient was changed to oral topotecan 2.3 mg/m² on days 1 to 5, every 21 days. However, three months later, the patient once again was diagnosed with disease progression. Additionally, she suffered severe clinical deterioration, with a significant decline in her performance status. Because of the severity of her condition and her poor performance status, the therapeutic approach was changed to best supportive care.

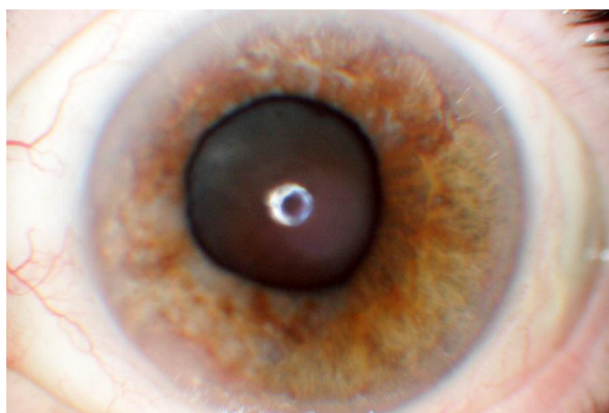


Figure 1. Iris Metastasis in a Patient With Small Cell Lung Cancer

3. Discussion

Despite advances in the management of iris metastases during the last few decades, iris metastases generally occur late in the course of SCLC implicating advanced disease. Prognosis usually remains dismal. Survival ranges between 1 and 18 months, with a median of 7 months (6).

The eye is involved during the course of the disease in 6% of lung cancer cases (7). The choroid is the most commonly affected layer, followed by the iris-ciliary body. Given that our patient already had systemic disease with multiple affected organs, we assumed that the iris lesion was a metastasis from the primary malignancy. However, it may occasionally be difficult to distinguish between a primary neoplasia and metastatic disease. The available diagnostic methods include fine-needle aspiration biopsy, iridocyclectomy and autopsy (8). Fine-needle aspiration biopsy constitutes the most widely used method, due to its simplicity. However, the diagnosis is based on immunohistochemical staining of tumor molecules rather than direct pathologic analysis, because of the inability of the method to collect a sufficient amount of cytologic material (5). In our case, we decided not to perform any invasive diagnostic procedures because of the limited expected benefits, both diagnostically and therapeutically.

Iris metastases can present as multiple white-to-yellow

nodules, glaucoma, anterior uveitis or hypopyon. Ophthalmologists are often the first physicians to face the diagnostic challenge of this finding, and should suspect, and be familiar with, the condition.

Therapeutic options include local eye irradiation, systemic chemotherapy, local resection or observation. Each case should be individualized, and therapeutic decisions should be carefully made after many factors are considered, such as the extent of local disease, local symptoms caused by the lesion, the extent of systemic disease, previous therapeutic interventions and overall performance status. Hence, the patient should be managed by an interdisciplinary team.

3.1. Conclusion

Disseminated small cell carcinoma constitutes a devastating condition, with a significant decline in the patient's quality of life. Among other foci, metastases can develop in the iris. This condition is often neglected by physicians because of its rarity, along with the significant comorbidities that these patients suffer.

However, physicians should be aware of this rare site of metastasis. Early diagnosis is of paramount importance in order to effectively prevent the significant morbidity this condition can cause if left untreated.

3.2. Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor of this journal.

Footnote

Authors' Contribution: Minas Sakellakis conceptualized the report and drafted and revised the manuscript. Stavros Peroukides conceptualized the report, treated the patient, and revised the manuscript. Gregoris Iconomou revised the manuscript. Haralabos Kalofonos treated the patient and revised the manuscript. All authors read and approved the final manuscript.

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