Case Report

Nonsmall Cell Lung Cancer Presenting with Bilateral Choroidal Metastases

Frank Davis,1 Yasser Rodriguez,1 Jayanth S. Sridhar,2 and Adam B. Stein3

1Department of Internal Medicine, University of Michigan, Ann Arbor, MI 48109, USA
2Department of Ophthalmology, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine, Miami, FL 33136, USA
3Division of Cardiology, Department of Internal Medicine, University of Michigan, Ann Arbor, MI 48109, USA

Address correspondence to Yasser Rodriguez, rodriguy@med.umich.edu

Received 17 October 2012; Accepted 1 July 2013

Copyright © 2014 Frank Davis et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Esthesioneuroblastomas are rare, soft-tissue tumors that can often extend from the sinonasal cavity into the intracranial and orbital space. Prognosis depends upon the histological grade and location/extent of the tumor. Treatment often consists of maximum surgical resection followed by adjuvant chemoradiation therapy. We present a case of a patient with esthesioneuroblastoma accompanied by an extensive osteoblastic reaction leading to a significant hyperostosis along the skull base. His presenting symptoms included diplopia, and imaging revealed invasion of the orbital and intracranial spaces. Although a gross total resection of the soft tissue component of the tumor was achieved, a complete removal of the involved hyperostotic skull base could not be performed despite endoscopic endonasal and bifrontal craniotomy approaches in the same operative setting. Symptomatically, the patient improved and went on to receive chemoradiation therapy; he remained clinically and radiographically stable at 12 months. Investigation into the genetics and immunohistochemistry of this rare, hyperostotic variant of esthesioneuroblastoma may provide details regarding its aggressive nature.

Keywords

choroidal metastases; nonsmall cell lung cancer; carboplatin; pemetrexed

1. Introduction

The choroid is a rare site of involvement by metastatic carcinomas. The literature that is available regarding the management of this complication is limited, especially with respect to the effectiveness of systemic chemotherapy without external beam radiation treatment (EBRT). This case of bilateral choroidal metastases demonstrates a very rare initial presentation of nonsmall cell lung cancer and highlights the potential benefits of systemic chemotherapy as a monotherapeutic approach to achieve choroidal metastasis regression.

2. Case presentation

A 59-year-old man presented to our ophthalmology clinic with flashes and decreased vision in his left eye. His past medical history was significant for a total thyroidectomy of a benign thyroid adenoma and a 10 pack-year smoking history. Ophthalmic examination revealed visual acuity of 20/50 in the right eye and 20/100 in the left eye. Fundoscopic examination showed an orange-yellow, subretinal lesion in the right eye measuring 5 × 2.1 mm (Figure 1). Examination of the left eye demonstrated an amelanotic lesion surrounding the optic nerve with fluid accumulation measuring 10 × 2.3 mm and evidence of retinal detachment. MRI of the brain demonstrated a thin lentiform area in the left posterior choroidal aspect concerning for a metastatic process (Figure 2). The MRI was unable to appreciate the choroidal lesion in the right eye seen on fundoscopic exam. A CT scan demonstrated multiple lung nodules ranging from 2 mm to 4 mm in size, an increase in the size of the subcarinal lymph nodes and an adrenal nodule. Positron emission tomography (PET)
Metastasis to the choroid has previously been associated with breast and lung cancer, typically occurring late in the disease course. However, choroidal metastasis as the primary presentation of metastatic lung cancer is very rare and has only been reported in 56 cases of which only four of those had bilateral metastases as seen in this case [5]. Previous studies have shown that combination chemotherapy (bevacizumab or carboplatin and pemetrexed) and external beam radiation therapy (EBRT) result in lesion remission in 85–93% of patients [1,5]. In this case, systemic therapy with carboplatin and pemetrexed without radiation therapy achieved choroidal metastasis regression and an improvement in visual acuity. The available literature on the effectiveness of systemic chemotherapy without EBRT is limited. However, one case report showed that complete remission of choroidal metastases from nonsmall cell lung cancer was achieved following three cycles of carboplatin, gemcitabine, and bevacizumab without EBRT [2].

4. Conclusion
This case of bilateral choroidal metastasis demonstrates a very rare initial presentation of nonsmall cell lung cancer and highlights the potential benefits of systemic chemotherapy as a monotherapeutic approach to achieve choroidal metastasis regression.

Sources of funding There was no source of funding for this manuscript.

Conflict of interest None of the authors reports a conflict of interest.

Authors’ contributions All authors had access to the data and a role in writing the manuscript.

References