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

Case Report

J Exp Clin Med
2025; 42(3): 343-345
doi: 10.52142/omujecm.42.3.18

Periorbital sebaceous carcinoma with intracranial extension: A case report

Elif Ezgi ÇENBERLİTAŞ*, Bilal Bahadır AKBULUT, Mustafa Serdar BOLUK, Taşkın YURTSEVEN, Hüseyin BİÇEROĞLU

Department of Neurosurgery, Faculty of Medicine, Ege University, İzmir, Türkiye

Received: 07.07.2024 • **Accepted/Published Online:** 09.08.2025 • **Final Version:** 30.09.2025

Abstract

Sebaceous carcinoma, typically originating from the meibomian glands of the eyelids, is a rare malignant tumor with a propensity for diffuse, invasive growth. Intracranial extension of this carcinoma is exceptionally rare, with only a few cases reported. Here, we present an uncommon case of sebaceous carcinoma with extension to the cavernous sinus, Meckel's cave, and the temporal lobe. The patient underwent surgery and radiotherapy, resulting in regression of the tumor. However, a secondary meningioma associated with prior radiotherapy was identified on follow-up imaging. Regular monitoring is crucial for early detection of recurrent or metastatic disease. The necessity of optimal patient care through multidisciplinary collaboration in managing complex cases is highlighted in this report. Close follow-up and individualized treatment planning are essential for ensuring the best outcomes in such cases.

Keywords: sebaceous gland neoplasm, intracranial neoplasms, craniotomy, case report

1. Introduction

Sebaceous carcinoma accounts for approximately 1–5.5% of all periocular malignancies (1). The intracranial extension of this rare carcinoma is exceptionally rare, with only 4 cases identified in the literatüre (2,3).

We present an uncommon case of sebaceous carcinoma with extension to the cavernous sinus and Meckel's cave.

2. Case Presentation

A 63-year-old male was referred to our tertiary care center with complaints of swelling and pain in his right eye. The patient had a history of bilateral retinal detachment at age 14, which resulted in complete loss of vision. At that time, he underwent a cataract operation that failed to restore his sight. Additionally, he was diagnosed with benign prostatic hyperplasia and hypertension.

Upon presentation, the patient's Glasgow Coma Score was 15, there was an absence of bilateral pupillary light response, no anisocoria, and he exhibited bilateral blindness with no motor deficits.

The examination findings for the right eye revealed proptosis, chemosis, corneal opacity obstructing the visual axis, a membrane across the pupil, a shallow anterior chamber, and poor fundus visualization. In contrast, the left eye displayed iris defects, an open visual axis, and positive synechiae. Visual evoked potentials (VEP) were unremarkable bilaterally, and visual acuity was negative in both eyes.

The patient underwent diagnostic imaging with contrast-enhanced magnetic resonance imaging (MRI) and computed tomography (CT) angiography. A mass of malignant nature, filling the lateral and superior aspects of the right orbit and extending from the orbital apex to the cavernous sinus, Meckel's cave, and the temporal lobe was identified (Fig. 1).

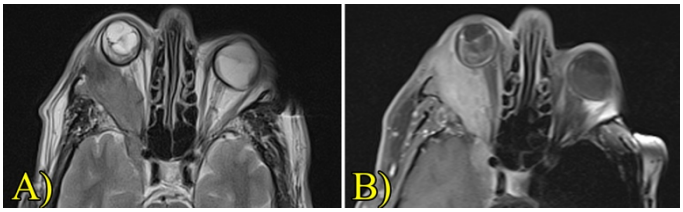

Fig. 1. T2 sequence MRI (A), showing right-sided orbital mass extending to the Meckel's cave through the orbital canal. The tumor showed contrast enhancement on the T1 contrast-enhanced sequence (B)

The patient underwent surgery via a supraorbital approach. Invasive, firm tumor tissue involving the bone was encountered. Invasion of the optic nerve sheath and cavernous sinus was observed. The right internal carotid artery (ICA) was visualized. Partial resection was performed while preserving anatomical structures. Dural repair and cranioplasty procedures were also performed. The patient, who did not develop any postoperative complications, was discharged on the third day after surgery without any new neurological deficits.

On pathological examination, the immunohistochemical profile of the tumor demonstrates positivity for Ber-EP4, focal positivity for cytokeratin 5/6, EMA, and adipophilin, consistent with a diagnosis of sebaceous carcinoma. The

*Correspondence: ecenberlitas@gmail.com

negative staining for CEA, synaptophysin, P40, and P63 further supports this diagnosis. and the patient was diagnosed with sebaceous carcinoma.

The patient was discussed in our oncology board following this diagnosis and underwent a course of 30 sessions of radiotherapy. After the treatment, the residual tumor in the patient regressed significantly (Fig. 2). Radiological follow-ups at six-month intervals did not reveal any recurrence of the mass.

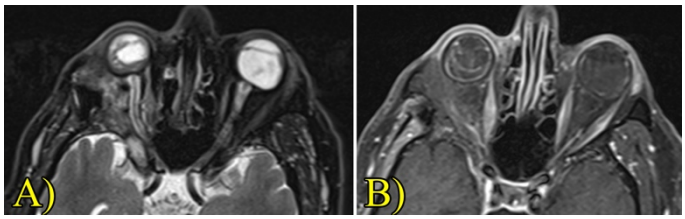

Fig. 2. Intraoperative view illustrating the exposed right ICA carefully preserved during the surgical excision of the tumor

However, at the 3-year follow-up, although there was no radiological sign of recurrent periorbital tumor, a lobulated lesion with smooth margins located at the petroclival region was identified. This lesion, which displayed mild contrast enhancement, filled the cisternal space at the brainstem level starting near the right temporal lobe and continuing superiorly and anteriorly, filling the internal auditory canal, which is consistent with a secondary meningioma associated with prior radiotherapy (Fig. 3). Due to his age, the patient did not consent to surgery for this lesion and is on radiological follow-up.

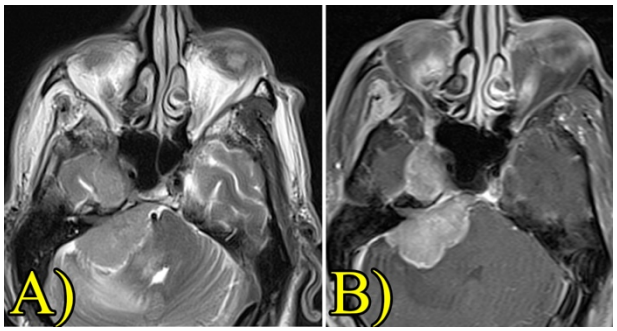

Fig. 3. A 1-year follow-up MRI scan demonstrated complete regression of the residual tumor, T2 sequence (A), and T1-contrast enhanced sequence (B)

Also, unfortunately, as a result of the radiotherapy, the patient experienced significant atrophy of the right hemifacial musculature, accompanied by severe fibrosis leading to the adhesion of the eyelids (Fig. 4).

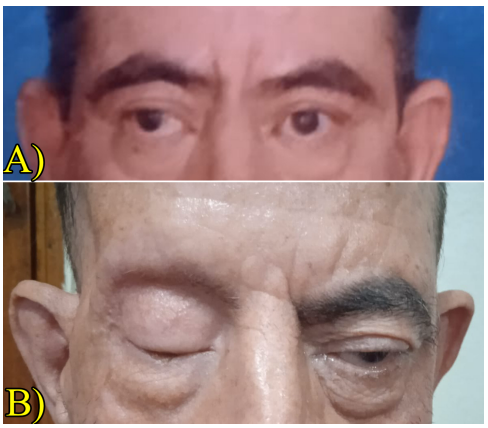

Fig. 4. MRI showed a lesion consistent with secondary meningioma post-radiotherapy, filling the cisternal space near the right temporal lobe and extending into the internal auditory canal. T2 sequence (A) and T1-contrast enhanced sequence (B)

3. Discussion

Sebaceous carcinoma is a malignant tumor that typically arises in the eyelids, commonly originating from the meibomian glands of the tarsus. It shows a tendency for diffuse, invasive growth in the eyelid and conjunctiva and can potentially spread to regional lymph nodes and distant organs (3).

The intracranial spread of sebaceous carcinoma is highly rare, with only a few cases reported in the literatüre (1,3). The potential for delayed diagnosis due to the uncommon presentation of this rare tumor emphasizes the importance of considering this diagnosis in patients with atypical orbital tumors. Multidisciplinary collaboration is crucial in managing complex cases to ensure optimal patient care. This report adds to the limited literature by presenting an unusual case of intracranial extension with involvement of the cavernous sinus, Meckel's cave, and temporal lobe, a combination of anatomical sites that has not been previously detailed in the same patient.

The radiological and intraoperative documentation of this extension pattern provides a new reference point for clinicians encountering atypical orbital tumors with possible intracranial invasion.

Recently, increased awareness of this neoplasm has led to earlier diagnosis, allowing for less aggressive treatment options. Currently, a greater number of cases are being treated through meticulous mapping biopsies, local resections, advanced reconstruction methods, and the incorporation of cryotherapy, topical chemotherapy, and radiotherapy (3). In a case of sebaceous carcinoma with intracranial extension, as described in a case report, local recurrence, and distant metastasis were observed despite gross total excision.[4] Based on the case and literature, the authors have focused on the necessity of total excision. In our case, due to the regression of the mass after radiotherapy and the absence of recurrence, we believe that functional-preserving surgery and radiotherapy would be appropriate. Our case supports a treatment strategy that balances oncological control with preservation of neurological function, demonstrating that subtotal resection

combined with adjuvant radiotherapy may be sufficient in selected patients.

This nuanced therapeutic approach offers an alternative to aggressive surgical excision, particularly when critical neurovascular structures are involved.

The emergence of recurrence or metastatic disease several years later, considering late complications such as the development of secondary meningioma post-radiotherapy, highlights the essential need for regular and ongoing monitoring for early detection.

Conflict of interest

The authors declared no conflict of interest.

Funding

No funding was used for the study.

Acknowledgments

None to declare.

Authors' contributions

Concept: T.Y., H.B., Design: M.S.B., T.Y., H.B., Data Collection or Processing: E.E.Ç., Analysis or Interpretation: E.E.Ç., B.B.A., Literature Search: E.E.Ç., B.B.A., Writing: E.E.Ç., B.B.A., M.S.B., T.Y., H.B.

Ethical Statement

The need for ethics approval was waived as this is a case report. Consent for publication was obtained using our institutional consent form.

References

1. Slutsky JB, Jones EC. Periocular cutaneous malignancies: a review of the literature. Dermatol Surg. 2012;38(4):552-569. doi:10.1111/j.1524-4725.2012.02367.x
2. Colak A, Akkurt C, Ozcan OE, Onol B. Intracranial extension of meibomian gland carcinoma. J Clin Neuroophthalmol. 1991;11(1):39-42.
3. Shields JA, Demirci H, Marr BP, Eagle RC, Shields CL. Sebaceous carcinoma of the ocular region: a review. Surv Ophthalmol. 2005;50(2):103-122. doi:10.1016/j.survophthal.2004.12.008
4. Hayashi Y, Shima H, Kita D, et al. Intracranial extension of meibomian gland carcinoma with pagetoid changes. J Clin Neurosci. 2009;16(4):568-570. doi:10.1016/j.jocn.2008.04.030