
BENEFIT OF SURGERY IN PRESENCE OF ORBITAL METASTASIS

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ABSTRACT

Purpose: Malignant tumors metastatic to the orbit are rare and only about 5% of orbital tumors are metastasis. We report on orbital surgery in a patient with orbital metastasis from small cell lung carcinoma (SCLC).

Methods: A 75-year-old man complained of pain in the left orbital region and proptosis. Head CT scan showed a left retrobulbar mass compressing the optical nerve. Chest and body CT scans showed a round-shaped mass at the apex of the left inferior lobule of the lung and widespread nodal involvement.

Results: A surgical intervention on the left orbit through a lateral approach was performed, with complete removal of the mass. Histology showed features of a non-anaplastic SCLC. A complete restoration of visual acuity was obtained

Conclusions: A debulking orbital surgery, in order to relieve optic nerve compression, should be offered to the patients with orbital metastasis.

KEYWORDS

metastasis; orbit; small cell lung carcinoma; surgery

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INTRODUCTION

Malignant tumors metastatic to the orbit are rare and only about 5% of orbital tumors are metastases (1). The most common metastatic malignancies are breast, lung and prostate (1). In 10-30% of cases, the onset of ocular/orbital symptoms predates the detection of the primary tumor, especially in case of lung and kidney tumors (1). However, in about 10% of the cases, the primary site remains unknown despite thorough examination (1). The small cell lung carcinoma (SCLC) is one of the most aggressive metastatic tumors while the common sites of metastasis include bone, liver, lymph nodes, central nervous system, adrenal gland, subcutaneous tissue and pleura (2). We report here on a case of SCLC with orbital metastasis (OM) as the first presenting manifestation. We will also discuss treatment decisions in light of other studies.

CASE REPORT

A 75-year-old man came to the Emergency Department of our Hospital because of pain in the left orbital region and proptosis. He has complained over the past 3 months of a progressive reduction in visual acuity (VA) and weight loss (about 12 kilograms). He was a heavy smok-

er (about 25 cigarettes/day). A head CT scan showed a left retrobulbar mass compressing the optical nerve (ON) (*Fig. 1a*, arrow). A chest CT scan showed a roundshaped solid mass (diameter of approximately 20 mm) at the apex of the left inferior lobule of the lung (*Fig. 2*). A total-body contrast-enhanced CT scan confirmed the presence of a mass suggestive of a primary adenocarcinoma of the lung, with widespread involvement of lymphnodes of the lung hylum, mediastinum, supraclavicular and lower neck regions. The chest surgeon, in the light of the radiologic picture, decided not to perform intervention.

A decrease of VA in the left eye (vision of 6/10) was recorded. No oculomotor abnormalities and visual field were present. Ophthalmoscopy revealed disc swelling, "flame hemorrhages", twisting and edematous vessels in the left eye and arteriolar narrowing in the right eye. Fluorescein angiography (*Fig. 3*) was also performed, showing epipapillary teleangiectasia, peripapillary "flame hemorrhages" and late fluorescence (diffusion) in the left optic disc. Although total body CT scan showed an advanced thoracic spread of the disease and the thoracic surgeon ruled out surgery, we decided to operate the patient in order to preserve his VA and to make a histologic diagnosis.

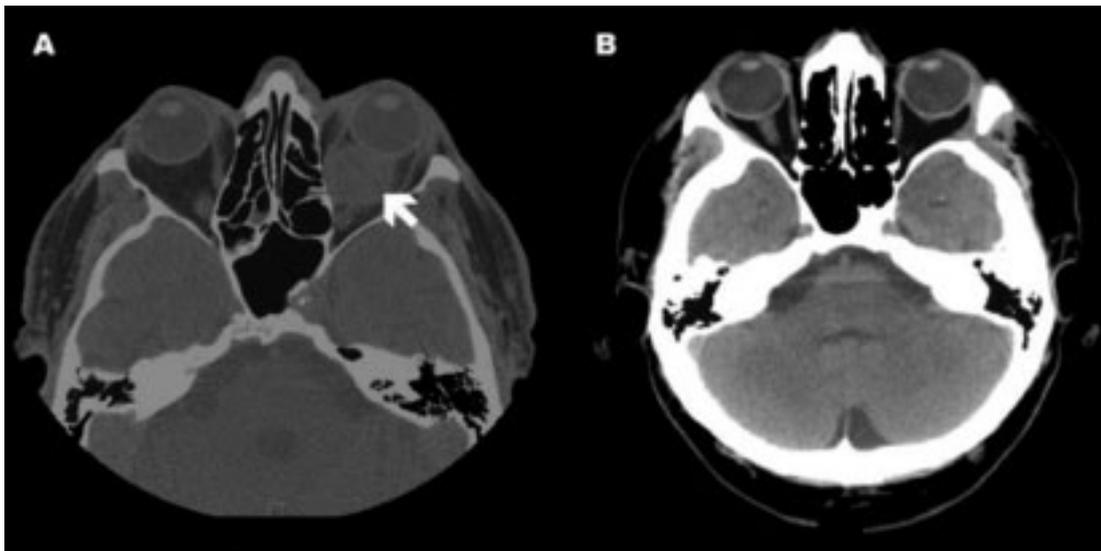


Fig. 1: Axial CT scan of the head shows left retrobulbar mass (arrow in A) and no residual mass after operation (B)

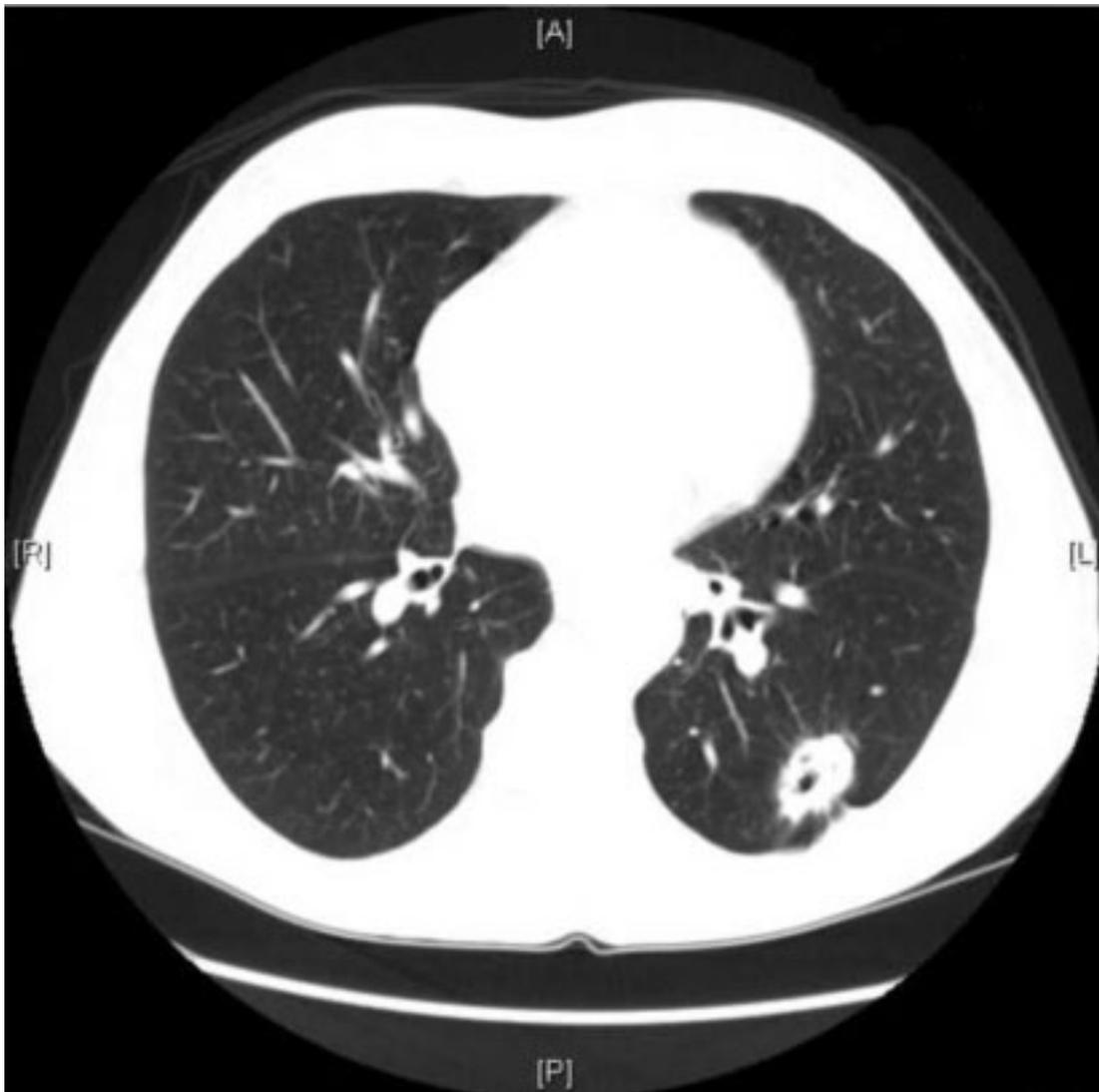


Fig. 2: Chest CT scan showing a solid round-shaped abnormality with a diameter of about 20 mm at the apex of the left inferior lobule of the lung

One week after the admission, we performed a surgical intervention on the left orbit through a lateral approach (Kronlein). Preoperatively, after having bended the lateral rectus muscle superiorly, the tumor was progressively debulked and removed. Special attention was paid to to preserve the integrity of the optic nerve, which was compressed but not infiltrated by the tumor. The complete removal of the mass was documented by a head CT scan (*Fig. 1b*). Histologic report (*Fig. 4*) showed infiltration of the con-

nective and muscular tissues of the orbit due to the presence of a poorly differentiated and partially necrotic carcinoma with a high proliferative index. Morphological and immunophenotype features were suggestive of a non-anaplastic SCLC.

Post-operative course was uneventful and a complete restoration of VA was obtained and confirmed at the follow-up visit 30 days post-surgery. The oncologist suggested also treat-

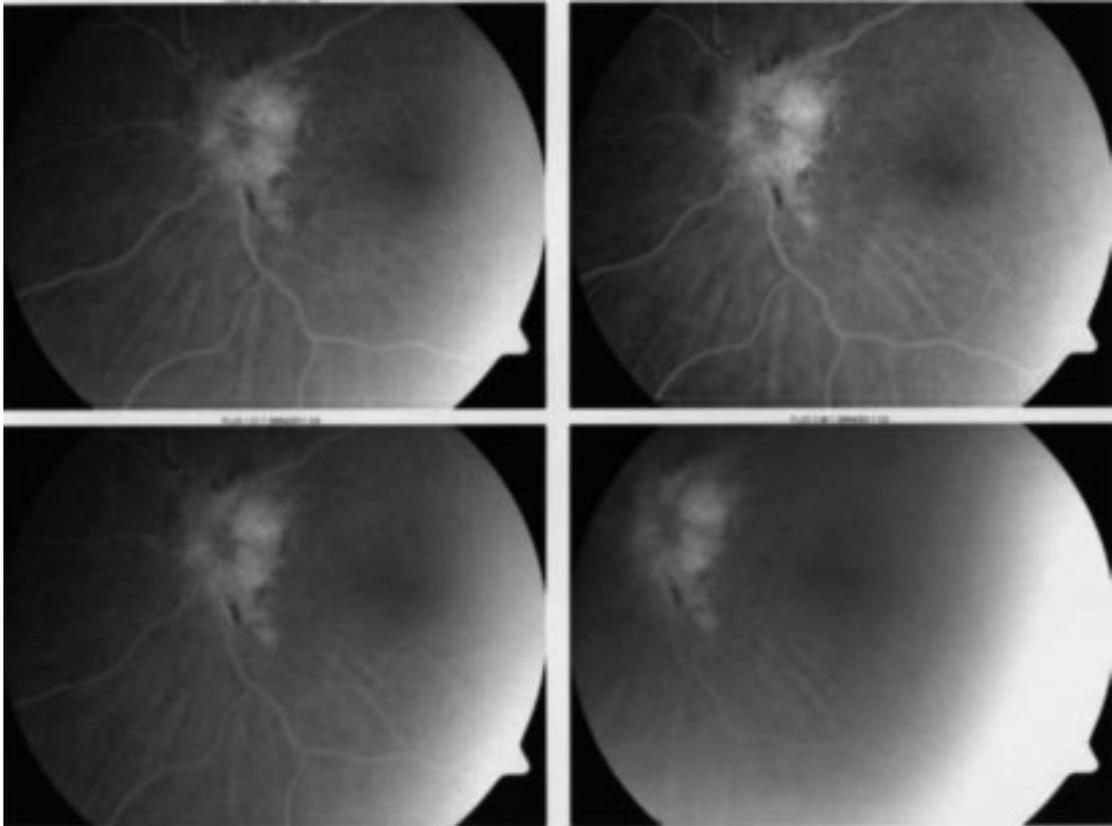


Fig. 3: Fluorescein angiography. See text for details

ment with chemo- and radiotherapy, which will be soon performed in a different medical Institution, because the patient will move to a different city. Unfortunately, after discharge from our Hospital the patient was not contactable and thus we could not assess his clinical status after treatment with chemo- and radiotherapy.

DISCUSSION

To the best of knowledge, no other cases of SCLC with OM and ON compression that could be considered eligible for orbital surgery are known. Instead, there are some cases similar to our patient, but treated differently. In 3 cases (3, 4, 5) with impairment of VA by compression or stretching of the ON, the tumor (histologically SCLC) extended outside the orbit on the surface of the skull and response to chemi-

oand/ or radiotherapy was highly variable. Zarogoudilis & al. described a patient with OM from lung adenocarcinoma and visual impairment due to ON compression treated with chemo- and radiotherapy of the orbital mass, but without improvement of VA (6). Char et al presented a series of 31 patients with OM (1). They used tumor debulking in patients with primary orbital tumor; in patients that were reluctant to needle biopsy, in those cases with solitary OM, and in patients with decreased VA from ON compression. Only in the last setting the authors obtained good temporary results.

The prognosis in patients with SCLC is dismal. Estimated median survival time is 10 months (7) whereas in patients with OM is between 10 and 20 months (1). After a correct diagnosis, the choice of treatment is based on the systemic status of the patient and on the possible

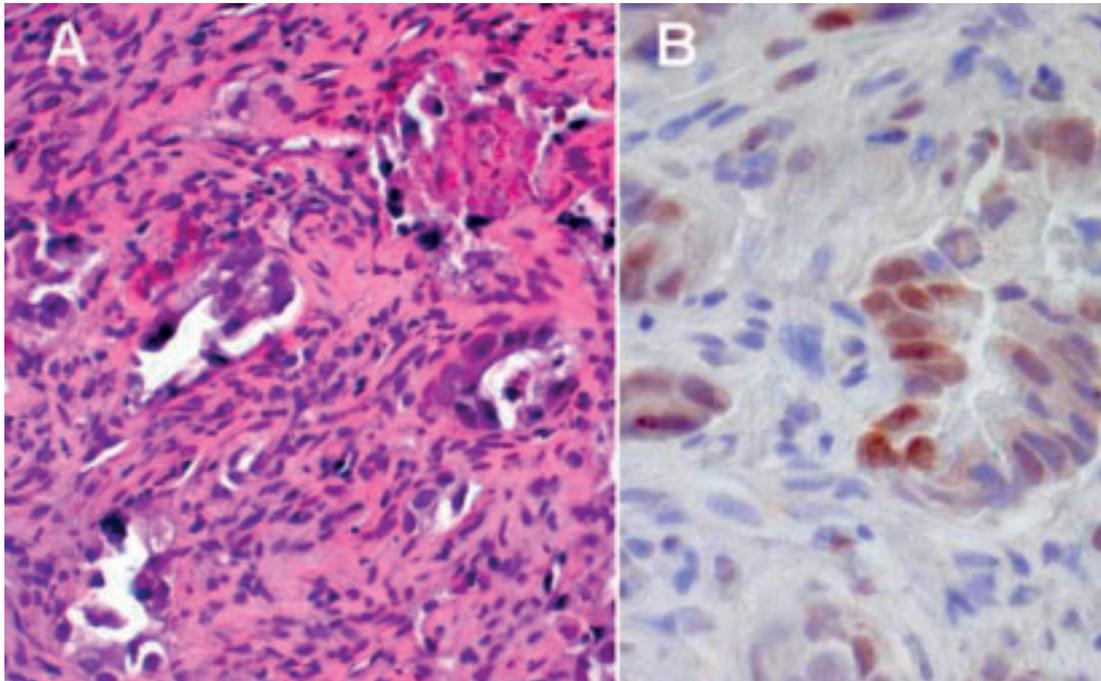


Fig. 4: Metastatic deposit of lung cancer (A) showing a positive nuclear staining of Thyroid Transcription Factor-1

presence of ON compression (1). The goal of treatment should focus on preservation and restoration of VA as soon as possible. Since these patients have a limited survival time, the preservation of VA has an important impact on their quality of life. Despite the reported cases of VA recovery after several weeks of radio and/or chemotherapy (3, 4), such a good response is somehow unpredictable (5, 6). In our opinion, a debulking orbital surgery that relieves ON compression should be offered to the patient whenever is possible.

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