

## Visual Improvement and Stabilization by Surgical Resection of Optic Nerve Sheath Meningioma

Marcio S Rassi MD; Svetlana Pravdenkova MD, PhD; Sashank Prasad MD; Ossama Al-Mefty MD

### Introduction

Although meningiomas can frequently involve the optic nerve, primary optic nerve sheath meningiomas (ONSM) are extremely rare, accounting of 1 to 2% of all meningiomas. Surgery as initial treatment is nearly abandoned, given its purported high morbidity in regards to visual function. We describe the peculiarities of these tumors and the visual outcomes of a series of patients who were treated with surgery aiming at maximal resection.

### Methods

We retrospectively analyzed the data of 10 patients harboring ONSM surgically treated by the senior surgeon from 1998 to 2016. Diagnosis was based on radiographic and intraoperative findings and typical histological features. Preoperative and postoperative visual assessments were performed by neuro-ophthalmologists in all cases.

### Results

There were 9 females and 1 male. The mean age at diagnosis was 48.4 years (range 25-70). Mean follow-up was 40 months (range 0.2-88). The most frequent presenting symptom was visual impairment (90%). Gross total resection was obtained in 7 cases. When comparing preoperative and postoperative visual function, 5 patients showed improvement of their vision at last follow-up, 3 patients showed stable vision, and 2 patients had decreased visual function postoperatively. There was no surgical mortality or infection. Operative complications included cranial nerve palsy in 4 patients, of which, 3 resolved completely during follow-up.

### Conclusions

Contrary to conventional teaching, surgery can play a fundamental role in the primary treatment of ONSM. Gross total removal can be achieved with vision preservation, and improvement, without major surgical complications, especially at early stages of the disease. Patients with good preoperative vision have higher chances of a favorable outcome when compared to those with poor vision.

### Learning Objectives

Primary optic nerve sheath meningiomas are rare and slow growing tumors. If untreated, they lead to progressive visual loss and blindness. Surgical treatment can offer preservation and improvement of visual function with acceptable morbidity, especially in the early stages of the disease.

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