

## Abstract

We demonstrate the microsurgical resection of a complex clinoidal and optic canal meningioma in a 67-year-old woman presenting with right eye double vision and blurriness. We performed a right frontotemporal craniotomy and posterolateral orbitotomy to achieve complete extradural and intradural decompression of the optic nerve followed by gross total resection of the tumor.

## Clinical presentation

A 67-year-old woman presented with headaches, right sided diplopia for 1 year with visual blurring over 5 months. She was found to have a right clinoidal and lateral planum tumor on MRI (Figure 1) which was homogeneously enhancing and measured 1.5 x 1.3 x 1.5 cm (AP x TR x CC). The tumor caused severe compression of the right optic nerve. CT angiogram showed the right supraclinoid ICA and ophthalmic artery to be encased by the tumor.

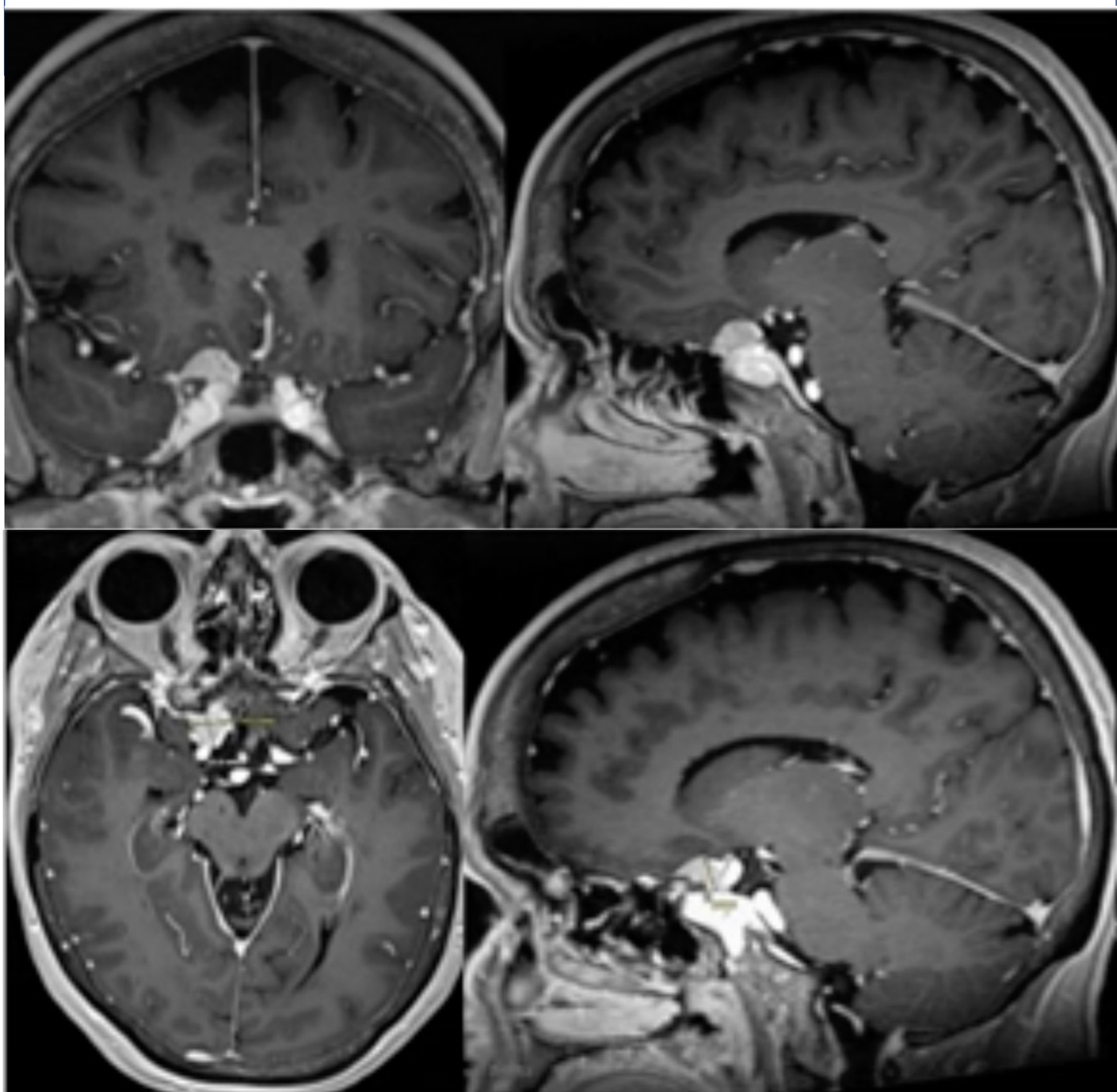


Figure 1: Preoperative MRI

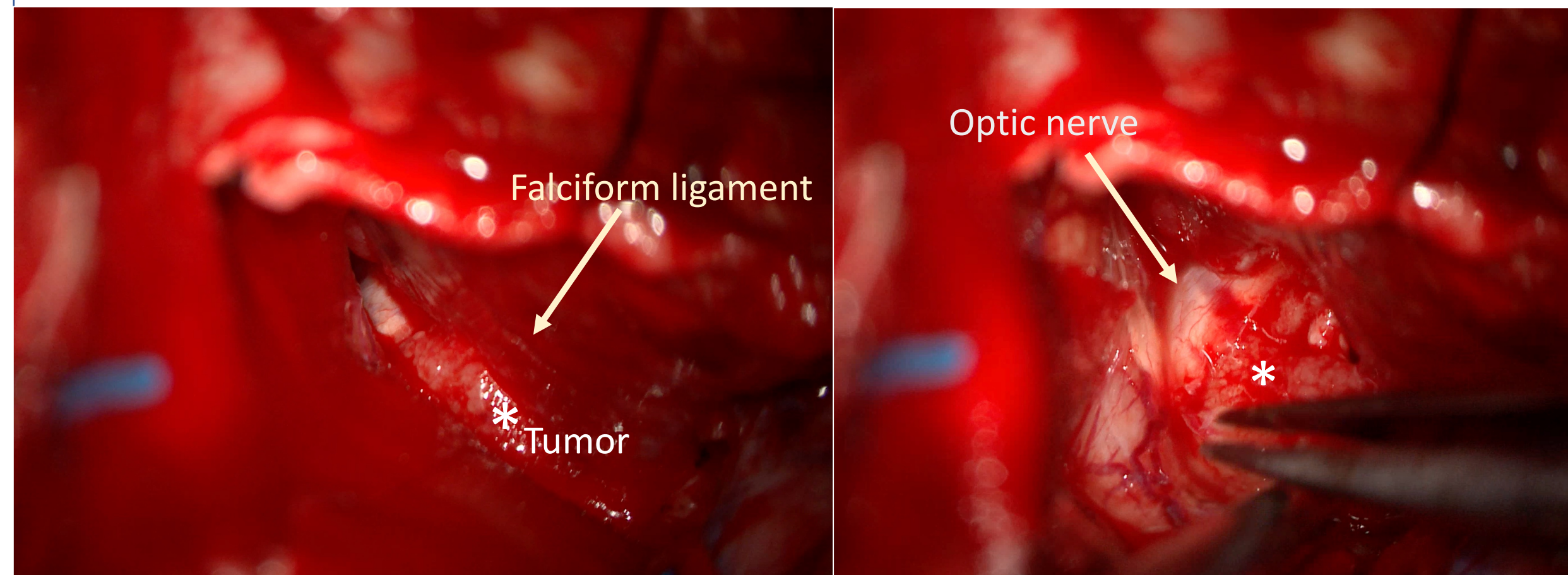
## Rationale for the Procedure

Microsurgical resection of the tumor was recommended because of

- Progressively worsening vision over the past year during observation and follow-up. Her visual field exam showed severe deficits in the right eye
- Persistent worsening headaches
- Severe optic nerve compression by the intracanalicular portion and the clinoidal portion of the tumor

## Key Operative Steps

- Positioned supine in 3-point pins with head turned 45-degrees to the left side extended and elevated
- Lumbar drain was placed for brain relaxation during the extradural portion of the procedure
- Right frontotemporal craniotomy and orbitotomy
- Extradural and intradural optic nerve decompression and anterior clinoidectomy
- Opening the **falciform ligament** superior to the tumor



- Gross total tumor resection from the intradural and extradural spaces (Figure 2)
- Basal dural closure to the periorbita

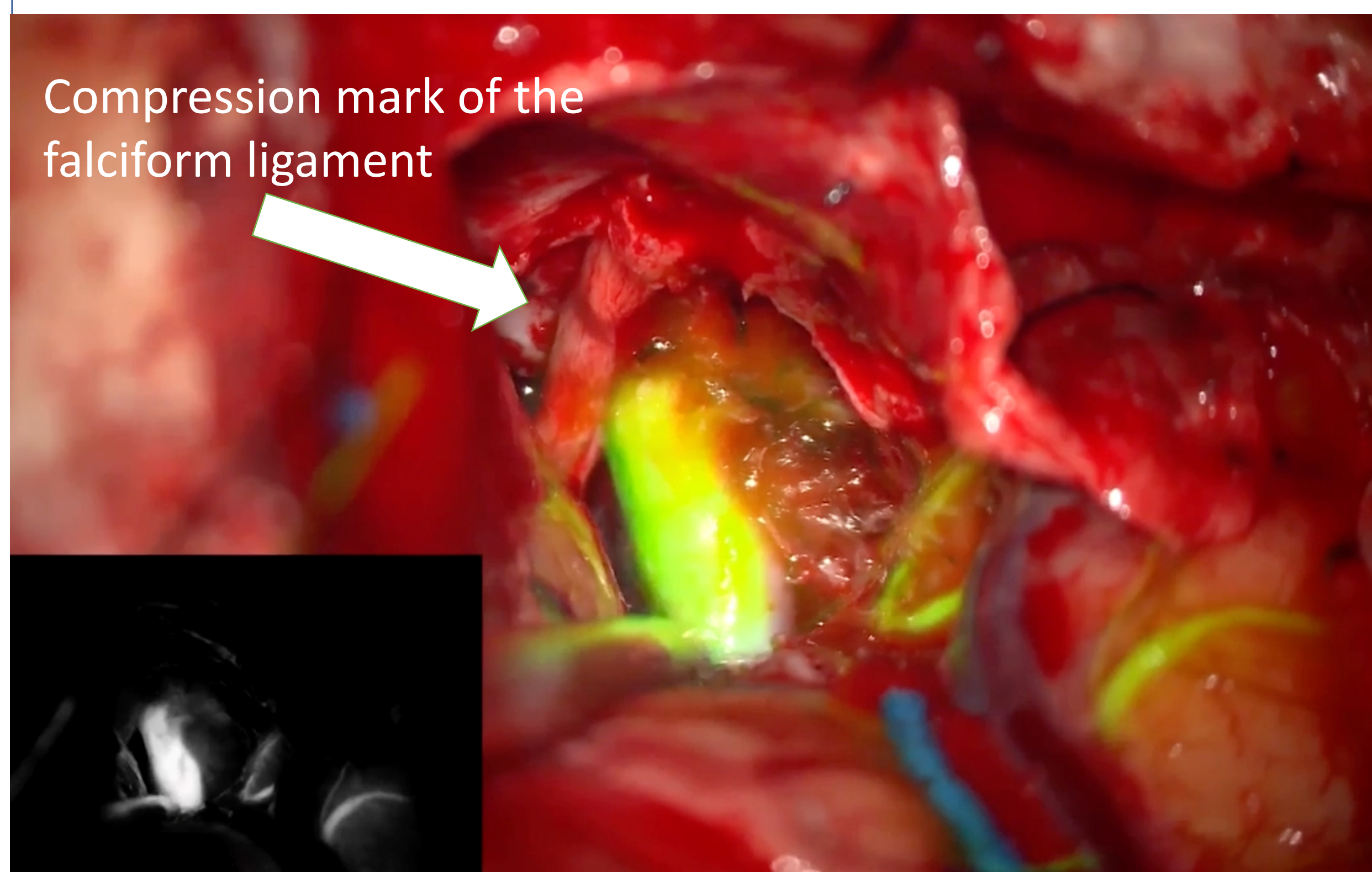


Figure 2: Intraoperative image showing complete tumor removal

## Clinical and Imaging Outcome

Gross total resection of the tumor was achieved (Figure 3). Her right eye vision worsened immediately post-operation, which was treated with high-dose steroids. Her vision improved to baseline on day 4 post-operation. She was discharged home on post-op day 6.

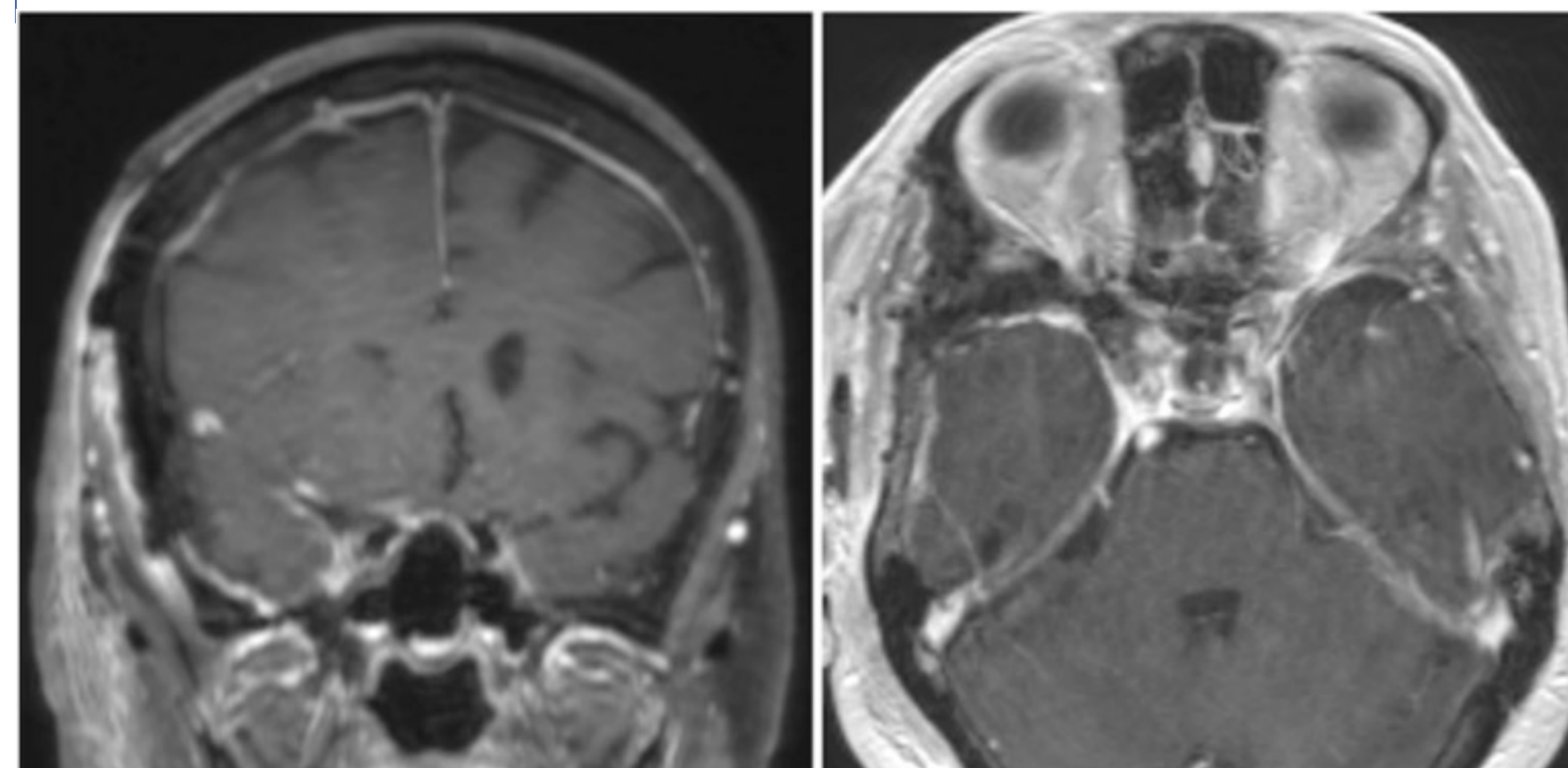


Figure 3: Postoperative MRI

## References

1. Bassiouni H, Asgari S, Erol Sandalcioglu I, Seifert V, Stolke D, Marquardt G. Anterior clinoidal meningiomas: functional outcome after microsurgical resection in a consecutive series of 106 patients: Clinical article. *J Neurosurg.* 2009;111(5):1078-1090.
2. Starnoni D, Tuleasca C, Giammattei L, et al. Surgical management of anterior clinoidal meningiomas: consensus statement on behalf of the EANS skull base section. *Acta Neurochir (Wien).* 2021;163(12):3387-3400.