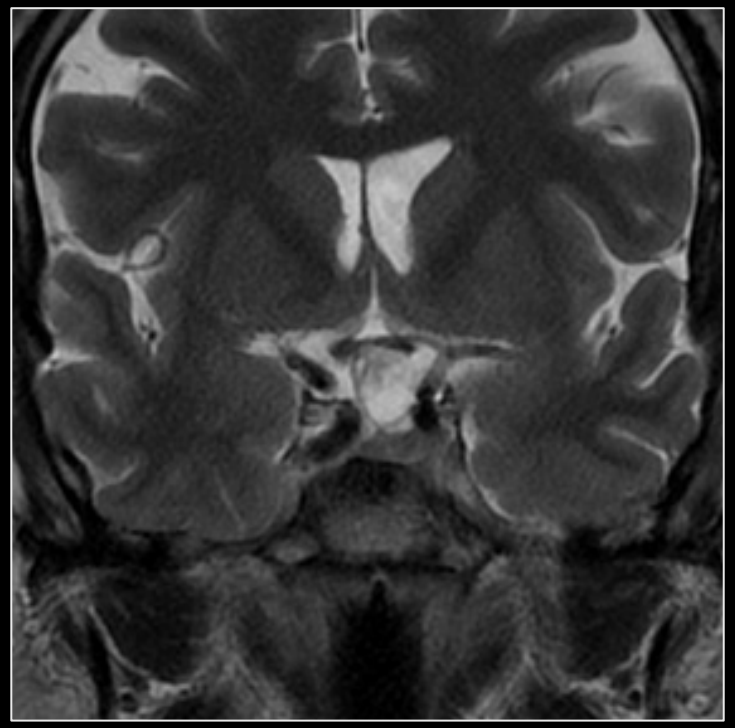
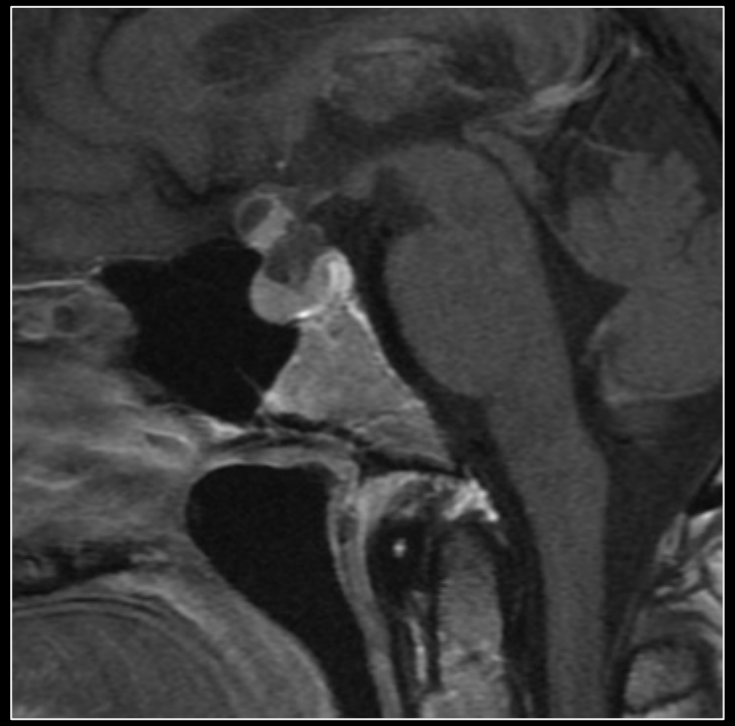
Visual Deterioration After Suprasellar Mass Resection





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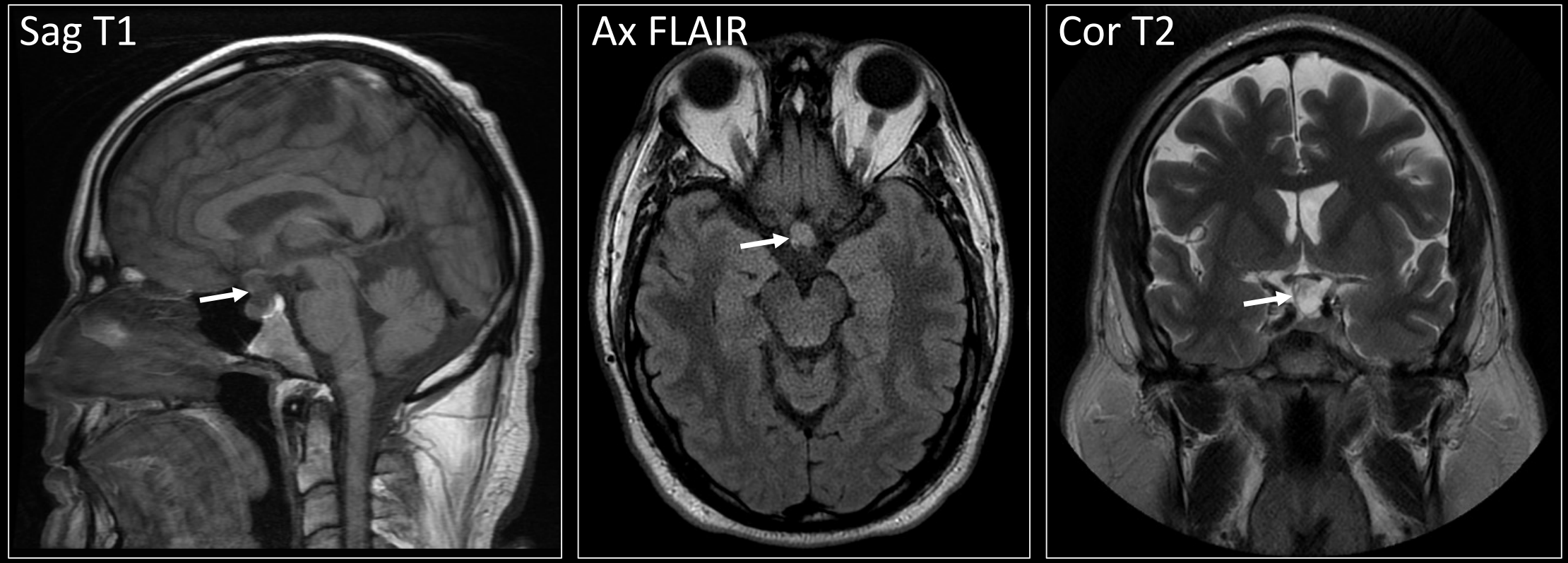
Clinical Presentation

A 50-year-old male presented with headaches and bitemporal hemianopsia.

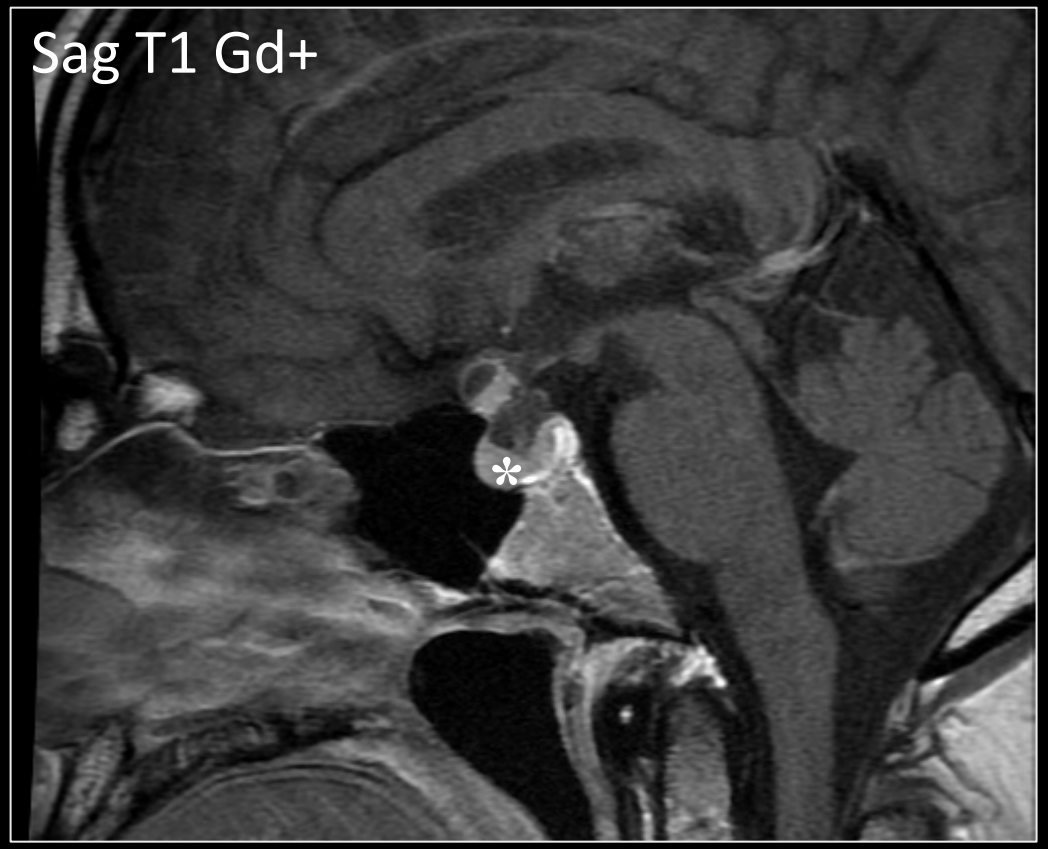
Initial Brain MRI Without Contrast

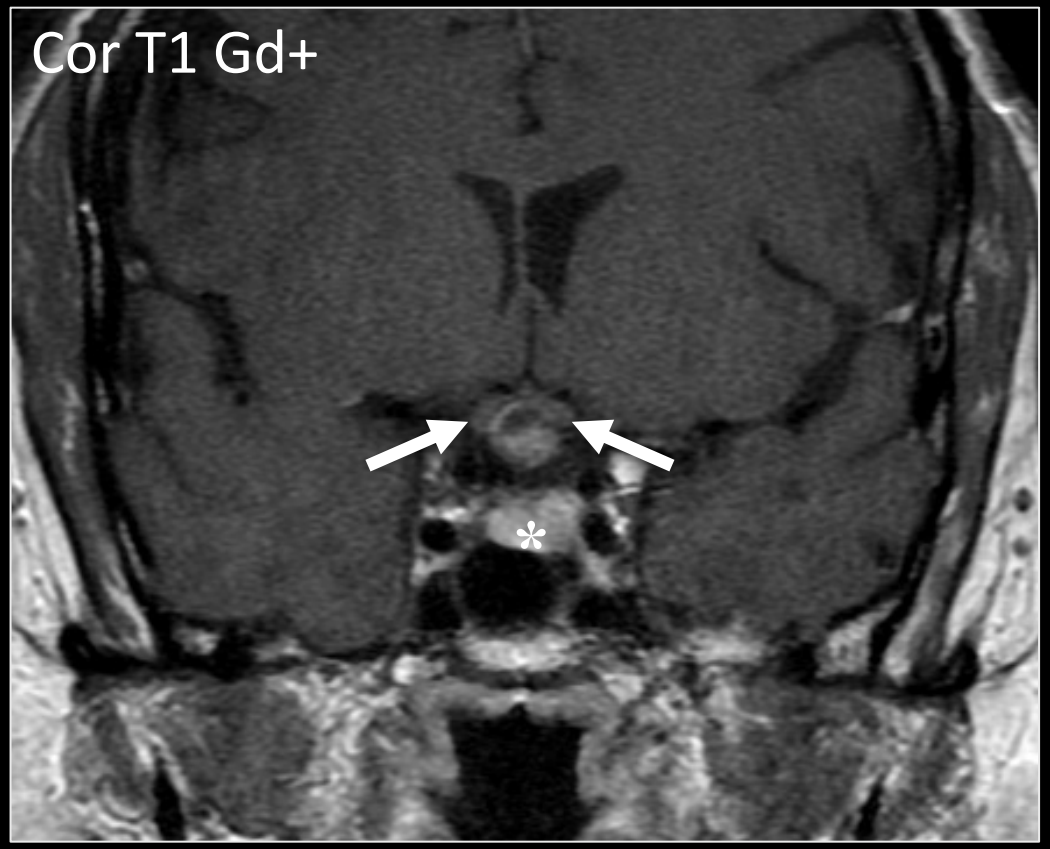


Initial brain MR images demonstrate a T1 hypointense, T2 hyperintense lesion (arrows) centered along the superior aspect of the pituitary gland.

Further evaluation with pituitary MRI without and with contrast was recommended.

Pituitary MRI





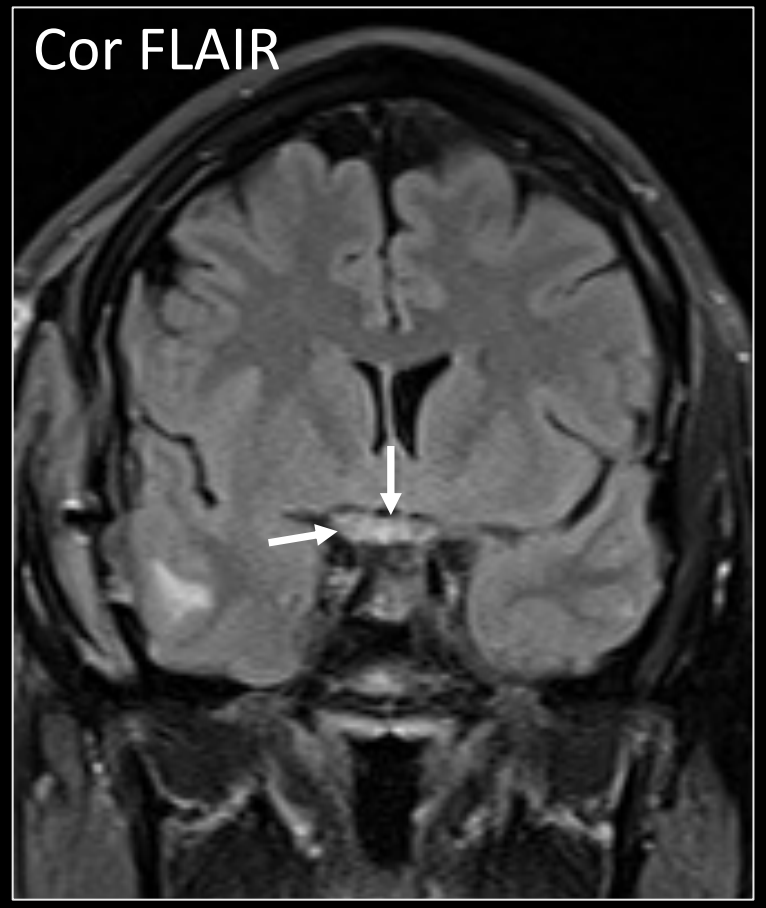
Pituitary MR demonstrates a mixed cystic and solid mass appearing separate from the pituitary gland (*) and exerting mass effect on the optic chiasm (arrows).

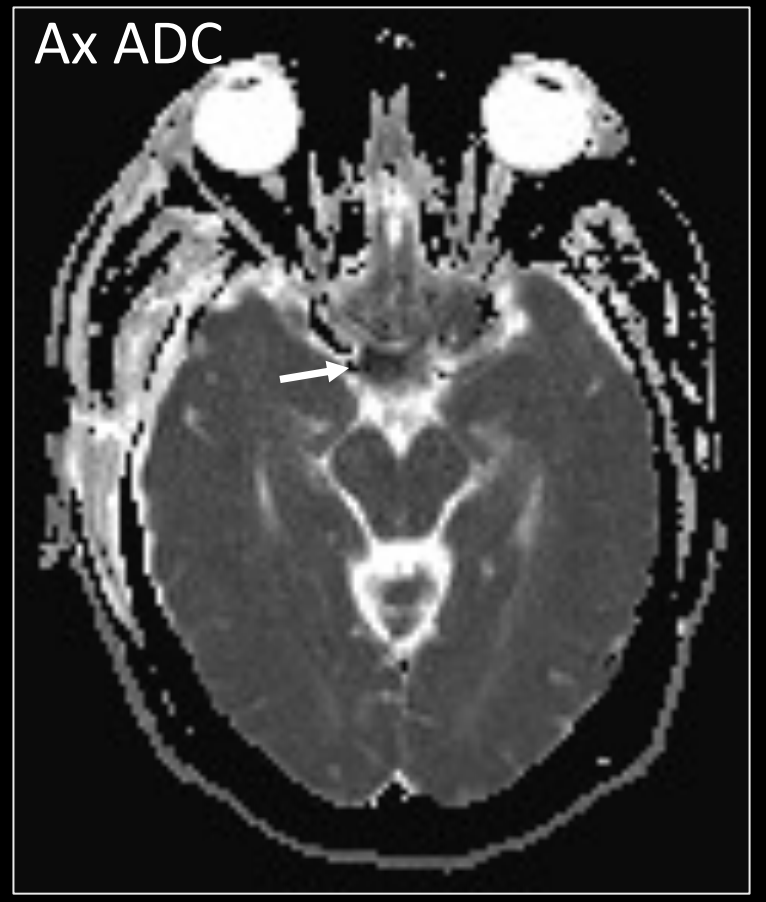
A craniopharyngioma was suspected.

Initial Management

- Given worsening headaches and progressive vision loss, the patient opted for surgical resection, which was performed via right pterional craniotomy.
- On postoperative day 1, the patient awoke with complete vision loss in his right eye.

Postoperative Brain MRI





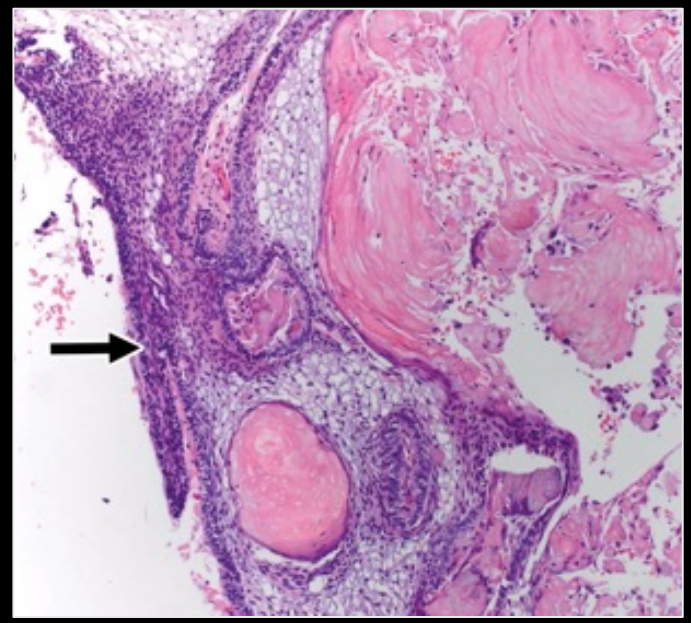
Postoperative coronal FLAIR image demonstrates swelling and abnormally increased signal involving the right optic nerve and right greater than left aspects of the optic chiasm (arrows). Note corresponding hypointensity on the ADC map (arrow).

Management

- Based on the imaging findings, the patient was diagnosed with ischemic infarction of the right optic nerve and optic chiasm.
- No repeat neurosurgical intervention was performed, and supportive care was provided.

Outcome

- Partial recovery of vision in the right eye, though significantly reduced compared to preoperative baseline.
- Histopathologic evaluation showed adamantinomatous craniopharyngioma, WHO grade 1.



Shih RY, et al. Radiographics, 2021; 41(7):2029-2046.

Take Home Points

- Postoperative vision loss is a known complication of surgeries in the sellar and suprasellar region and can result from ischemia or from compressive hematoma.
- Optic nerve compression by hematoma requires surgical decompression, while ischemia is treated with supplemental oxygen and hypertensive, hypervolemic therapy.
- MRI plays an important role in differentiating between these two potential causes.

Additional Reading

- Mendel E, et al. Revisiting postoperative vision loss following non-ocular surgery: a short review of etiology and legal considerations. Front Surg, 2017; 4:34.
- Carnevale JA, et al. Visual deterioration after endonasal endoscopic skull base surgery: causes, treatments, and outcomes. J Neurosurg, 2021; Oct 1; 1:1-11.
- Shih RY, et al. Primary tumors of the pituitary gland: radiologic-pathologic correlation. RadioGraphics, 2021; 41(7):2029-2046.