Iatrogenic Optic Chiasm Compression Presenting as Pituitary Mass Recurrence: Findings During Revision EEA after Surgery at Outside Institution

Diana Bigler MD, Claire Cotton BA, Brooke Sligh BS, Adam Davis MD, Stilianos Kountakis MD PhD, M Salman Ali, MD, J Kenneth Byrd MD

Case Presentation

A 29-year-old female presented to the emergency department for intractable nausea and vomiting for 1 month paired with new-onset left temporal hemianopsia. Three months prior, she had an initial prior transsphenoidal approach (TSA) at an outside hospital for a pituitary macroadenoma, which resulted in panhypopituitarism, left vision impairment, and right-sided blindness.

MRI brain revealed a heterogeneously enhancing lesion occupying the right sellar/suprasellar region, causing mass effect on the optic chiasm, abutting the right optic nerve and displacing infundibulum to the left. Based on these nonspecific MRI findings, it was unclear if these represented post-surgical changes or mass recurrence.

Endoscopic endonasal approach (EEA) revealed extensive scarring throughout the bilateral nasal cavities with minimally patent sphenoidotomy on the left. There was diffuse scarring of bilateral inferior and middle turbinates to the septum bilaterally and polyposis in the sphenoid sinus. Extensive surgical packing was encountered throughout the sella and suprasella without evidence of persistent pituitary tumor. The optic chiasm and optic nerves were decompressed by removing packing.

Post-operative course was unremarkable. At a recent clinic visit, she was recovering well with improving symptoms, including bilateral vision progression.

Discussion

Endoscopic Endonasal Approach is widely approved as a safe and effective surgical technique for pituitary tumor removal.[1] Although risks of EEA include vision complications, diabetes insipidus, and hypopituitarism, these are typically rare; Krings et al. found that, after primary TSA for pituitary tumors, 0.47% of pts had orbital complications and 1.59% had endocrinologic complications; however, after revision TSA, <5.21% of pts had orbital complications or endocrinologic complications.[2]

Similarly, Li et al. studied short-term post-op outcomes in TSA for pituitary adenomas and found 3.6% of patients experienced bitemporal hemianopsia, 10.1% DI, and 1.1% iatrogenic panhypopituitarism.[3]

This case is unique given her presentation and surgical packing displaying symptoms of tumor recurrence.

Conclusions

This case presents a novel perspective to EEA complications given that surgical packing, thought to be remnant tumor by the outside hospital, catalyzed the need for a revision surgery involving optic chiasm decompression.

Pre-Operative CT & MRI Scans

Figure 1. T2W Coronal View

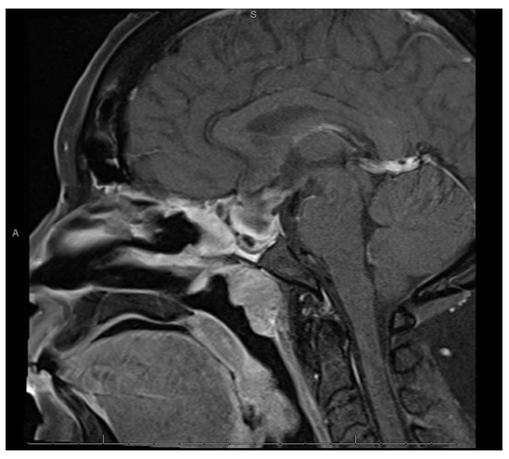

Figure 2. T1W Sagittal View

This T2W coronal view (Figure 1) and T1W sagittal view (Figure 2) shows the heterogeneously enhancing lesion occupying the right sellar/suprasellar mass measuring approximately 12 X 14 X 21 mm, causing mass effect on the optic chiasm and abutting right optic nerve and causing mass effect and displacing pituitary infundibulum to the left.

Intraoperative Images

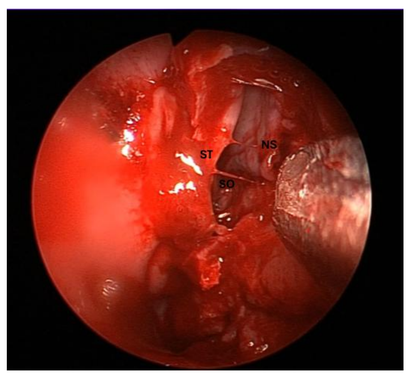

Figure 3. Extensive scarring of nasal septum (NS), remnant superior turbinate (ST) and scarring of sphenoid os (SO)

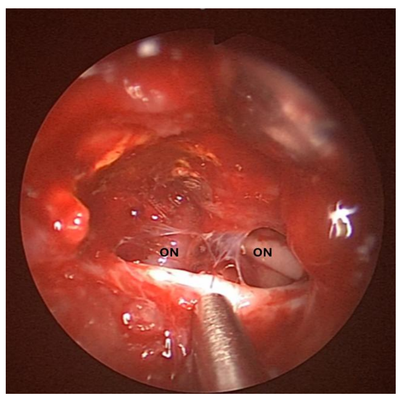

Figure 5. Suprasella was opened, optic nerve (ON) and chiasm decompressed after removal of excessive packing

Revision endoscopic approach to the skull base revealed extensive intranasal scarring and showed minimal exposure during the prior surgery. Extensive packing was encountered and removed from both sellar and suprasellar regions with decompression of optic nerves and chiasm. This was carefully reconstructed carefully to avoid further compression.

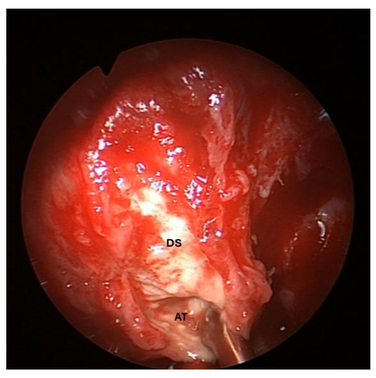

Figure 4. Opened dural substitute(DS) in sella revealed extensive packing with adipose tissue (AT) and surgicel

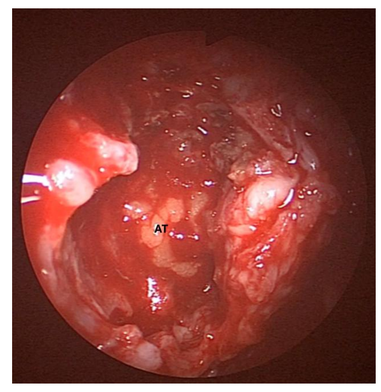

Figure 6. Adipose tissue (AT) was carefully packed to avoid compression of optic chiasm and used to fill sphenoid

Post-Operative CT & MRI Scans

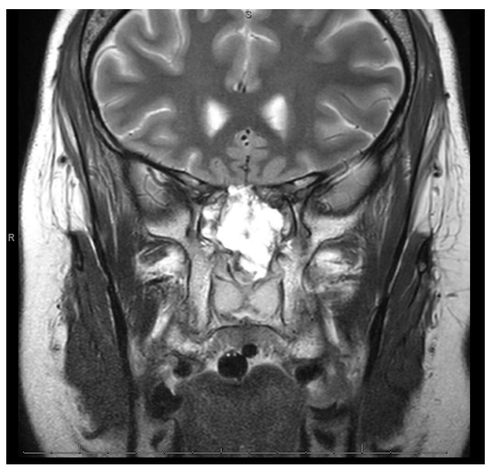

Figure 7. T2W Coronal View

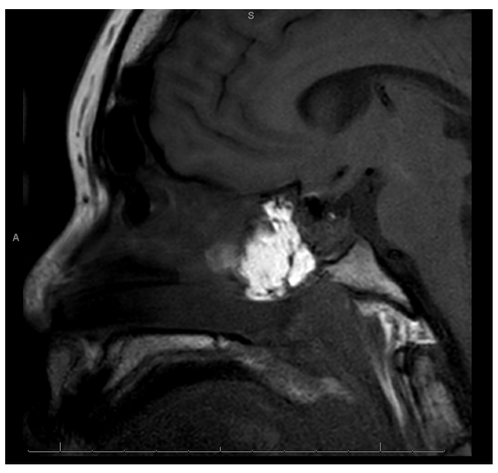

Figure 8. T1W Sagittal View

This T2W coronal view and T1W sagittal view shows the interval resection of the cystic sellar/suprasellar mass with reconstruction with abdominal fat graft without mass effect of the optic chiasm.

Contact

Diana Bigler, MD
Medical College of Georgia
1120 15th St, Augusta, GA 30912
dibigler@augusta.edu

Claire Cotton
Medical College of Georgia
1120 15th St, Augusta, GA 30912
clcotton@augusta.edu

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