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Visual Field Improvement Post Transsphenoidal Resection of Pituitary Adenoma
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Background
Patient with history of pituitary adenoma and multiple transsphenoidal resections presents with bitemporal hemianopsia. Following a third surgery, the patient shows gradual improvement in visual field (VF) in one of the two affected eyes.

I. Case History
- 47 year old black male, complaining of blurred vision, daily frontal headaches, and unsteady gait at times.
- Ocular History:
  Transsphenoidal resection of pituitary tumor 1995, 2000
- Medical History
  Unremarkable
- Medications
  None

II. Pertinent Findings
- Clinical
  BCVA: OD 20/20, OS 20/30+
  Pupils: PERRL (+)MG, trace APD OS
  Red cap: OD $1.00, OS $0.75
  Slit lamp: unremarkable
  GAT: OD 9, OS 9mmHg
  Dilated exam:
    Optic nerve: OD 0.35, OS 0.35 w/ temporal pallor
    Otherwise unremarkable
- Other tests
  FDT N30-5: bitemporal hemianopsia w/ central loss OS
  HVF 24-2: bitemporal hemianopsia
- Radiology Studies
  MRI brain/orbits: mass in the suprasellar region (3x2.4x2.4cm) with compression of the optic nerves at the level of the chiasm

III. Differential Diagnosis
- pituitary adenoma
- iatrogenic surgical damage
- craniopharyngioma
- optic nerve glioma
meningioma

IV. Diagnosis and Discussion
- Pituitary adenoma

It is common for these patients to present with complaints of vision loss and headaches. Studies show that 95% of macroadenomas (measuring >1cm) present with VF defects, mostly in the form of bitemporal hemianopsia. After surgery, VF’s have been shown to return to normal or improve in as many as 95% of patients, with more than 50% of the recovery occurring in the first 3 to 6 months postoperatively. This case illustrates the visual field recovery process after undergoing transsphenoidal resection surgery.

VF’s taken prior to surgery showed complete bitemporal hemianopsia. At the 3 month follow-up, the right VF showed improvement in the central and inferior temporal quadrant, with a dense defect remaining in the superior temporal quadrant. At 9 months, the field in the right eye showed near complete recovery with several scattered temporal defects remaining. At 15 months post-op, the VF shows complete recovery. The left eye showed no improvement from initial presentation.

While it is unclear why the left VF did not improve, the right VF showed improvement starting in the inferior field, and extending to the superior field. This is consistent with the pathophysiology of optic nerve compression from the enlarged pituitary in the sella tursica below the optic chiasm.

V. Treatment and Management
- Endoscopic transsphenoidal resection
- Radiation therapy
- Monitor MRI, hormone levels and VF’s

VI. References