TITLE: Early experience of a developing skull base team using the endoscopic endonasal as primary treatment for giant (>4cm) pituitary adenomas.

SPEAKER: Nathan T. Zwagerman, M.D.  CITY/STATE: Milwaukee, WI

AUTHORS: Nathan T. Zwagerman, David Poetker, Christopher Long

ABSTRACT:
Introduction: Patients with giant (>4cm) pituitary adenomas generally present with a combination of symptoms including bitemporal hemianopsia and hypopituitarism. Treatment largely consists of tumor removal and optic nerve decompression. Traditional approaches include open craniotomy to protect suprasellar structures (optic nerves, anterior cerebral arteries) and decrease risk (cerebral spinal fluid leak). However, the endoscopic endonasal approach has been used with success to treat these lesions. We describe the initial experience of a developing skull base team using the endoscopic endonasal approach as the sole treatment for giant pituitary adenomas.

Methods: A retrospective review from July 2017 to December 2018 was performed found 83 consecutive patients who underwent treatment for pituitary adenomas at the Medical College of Wisconsin. Surgeries were all performed via an endoscopic endonasal approach using a dedicated skull base team consisting of a single neurosurgeon and one of 2 rhinologists. Seven (8.4%) were found to have giant (>4cm) pituitary adenomas. Patient demographics, tumor size, complications and outcomes were reviewed.

Results: A review of the 7 patients with giant pituitary adenomas indicated that the average age was 44.2 years. There were 5 (71%) males and 2 (29%) females. The most common presenting symptoms was bitemporal hemianopsia with 6 patients (86%). One patient (14%) presented with diabetes insipidus which did not resolve post op. Two patients presented with hypopituitarism. One improved after surgery. The average size of the tumors was 46mm (range 77-41mm) The average follow-up was 5 months (range 11-1 months) No patient experienced a post-operative cerebral spinal fluid leak. All patients were repaired using a nasoseptal flap. Two patients developed diabetes insipidus during the post-operative period with one being transient. Three patients remain on steroid replacement post-operatively. All patients had improvement in visual fields upon neuro-ophthalmology follow up. No patient suffered worsening visual fields. Tumor staining indicate 1 patient with a TSH staining, one with LH staining, two with ACTH staining, and the remaining (3 patients) with negative staining adenomas. Two patients (29%) had residual tumor that was manage with observation with serial imaging.

Conclusion: Giant (>4cm) pituitary adenomas present may clinical problems from a treatment standpoint. An endoscopic endonasal approach as sole first line treatment should be considered a safe and effective option for patients with giant (>4cm) pituitary adenomas.