

Uni-Nostril Endoscopic Surgery for Non-functioning Large and Giant Pituitary Adenomas: Surgical Outcomes in 153 Patients

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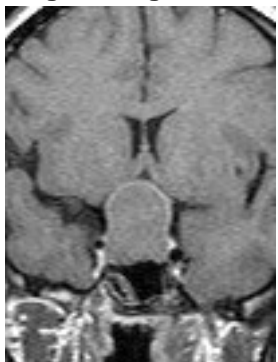
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Introduction

We studied the surgical outcomes in patients undergoing uni-nostril endoscopic surgery for the resection of non-functioning large and giant (>4 cm in maximal dimension) pituitary adenomas.

Methods

Patients were operated on between 2005 and 2017. Post operative gadolinium enhanced MR was done at 3 to 6 months after surgery. MR findings were noted as GTR, no residue; NTR, = 10%, Partial = 10% of tumor volume). The intra-operative estimate of EOR was compared with the imaging findings. Each tumor was also graded for cavernous sinus involvement using the Knosp grading (0-2, 3 and 4).

Fig. 1. Large tumor


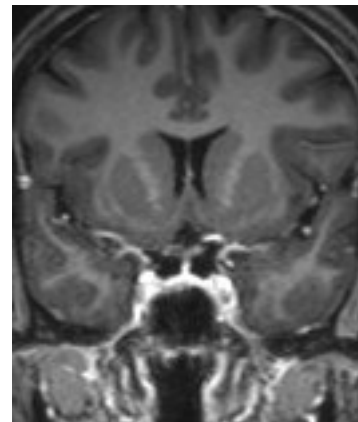
Preoperative image

Results

153 patients (age range 13 to 81 years; mean 44.8 years) were included in the study. The mean tumor volume was 17.3 cc (range, 2.6 to 96 cc, SD, 13.4); 54 were giant tumors. The average duration of surgery was 1.2 hours (range, 45 minutes to 150 minutes). There was 1 mortality, worsening of vision due to apoplexy in the residual tumor in 3 patients and epistaxis in 4 patients. Post-operative MR revealed GTR/NTR in 122 (79.8%) patients (mean volume of the residual tumor, 1.2 cc (range, 0 to 22 cc, SD 2.6)). Reoperation was necessary for recurrent CSF leak in 5 patients. In 135 patients assessed for vision, it had improved in 127 (94.1%) patients and was the same in 8 patients. The GTR/NTR rates were lower (statistically not significant) in Knosp grades 3 and 4 than in grades 0 to 2 (71.7% vs 83.5%; $p = 0.07$). Intra-operative estimate of EOR had a sensitivity of 84.5% and specificity of 54.2% (kappa statistic, 0.35 (fair agreement)).

Conclusions

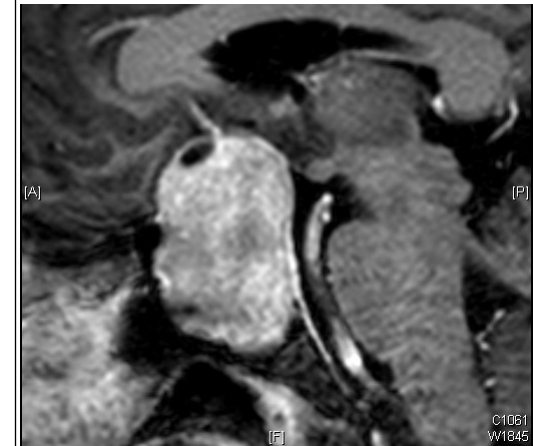
Uni-nostril endoscopic surgery for large and giant pituitary adenomas leads to GTR or NTR in 90% of patients and provides surgical outcomes similar to that reported with the bi-nostril technique with shorter operating times.

Fig. 1. Large tumor


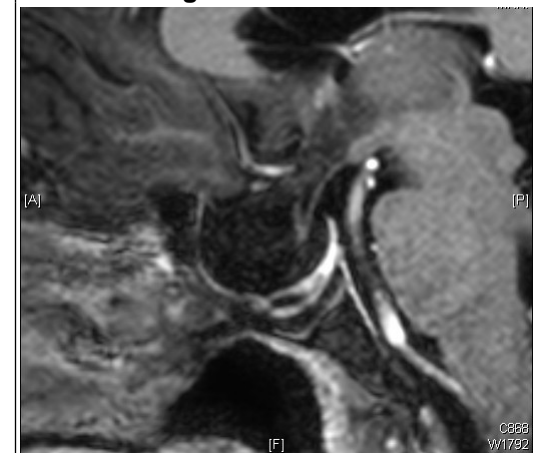
Post operative image showing gross total resection

Learning Objectives

At the end of this presentation, the audience would have learnt that uni-nostril endoscopic technique can be used effectively for the excision of large and giant pituitary adenomas and provides results similar to the more commonly used bi-nostril technique. They will also learn that intra-operative assessment of the EOR of a pituitary adenoma can be difficult with only fair agreement with the post-operative MR findings.

Fig. 2. Giant tumor


Preoperative image

Fig. 2. Giant tumor


Post operative image showing gross total resection