

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

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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**

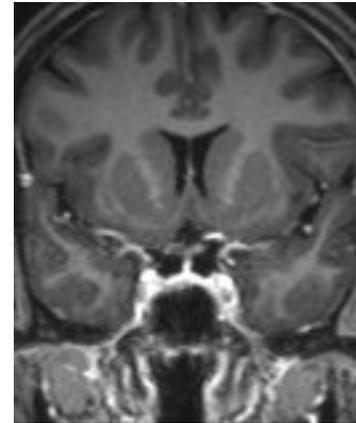

Preoperative image

## 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

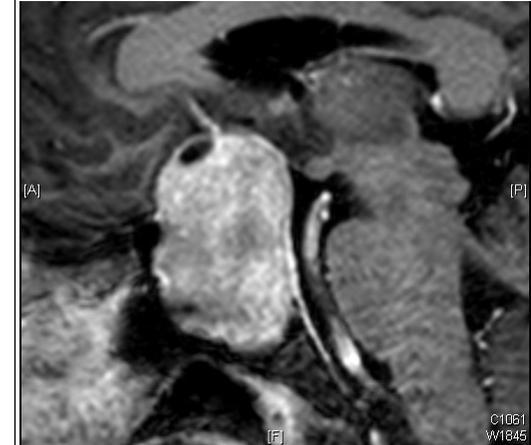
Uni-nostril endoscopic surgery for large and giant pituitary adenomas leads to GTR or NTR in 90% of patients and provides surgical outcomes similar to that reported with the bi-nostril technique with shorter operating times.

**Fig. 1. Large tumor**


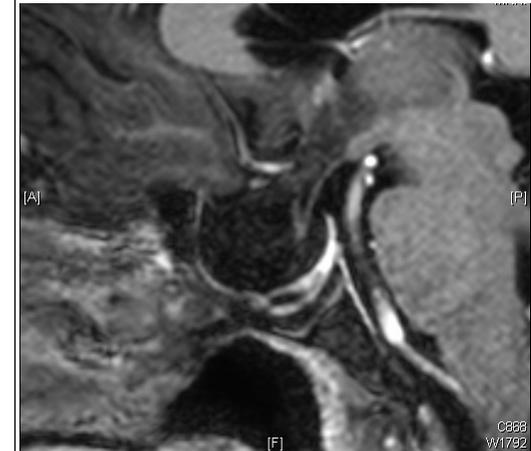
Post operative image showing gross total resection

## 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