Endoscopic Endonasal Approach for Pituitary Apoplexy: Experience in 57 Patients

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Introduction

Pituitary apoplexy is characterized by a hemorrhage or infarction of a pituitary tumor resulting in sudden headache, visual deficits and even coma. The endoscopic endonasal approach (EEA) is increasingly used to treat apoplexy.

Methods

We retrospectively reviewed patients with apoplexy who were treated with EEA between 2002 and 2011. 57 patients (mean age 56 years, 54% male) qualified: 61% presented with visual symptoms, 77% with headache, and 46% with pituitary dysfunction. The most common adenoma was non-functioning (77%), followed by prolactinoma (19%) and Cushing's disease (3.5%). 31% of patients had a cranial nerve deficit (cranial III, IV, and/or VI). The mean tumor volume was 9.2 cm3. The majority of tumors had suprasellar extension (63%), 26% cavernous sinus extension and 11% were purely sellar. The median Knosp score was 2 (range 0-4).

Results

The median follow up was 62.0 months (range 1.0-154.1 months). Complications of surgery included CSF leak (10.7%), epistaxis (3.6%), anosmia (1.8%), hydrocephalus (1.8%), and death (1.8%). 95% of patients had complete or partial resolution of their pre-operative cranial nerve deficit; no patients developed new cranial nerve deficits. Among patients with pre-operative visual field defects, 74% had improvement of their symptoms and 6% had complete resolution.

Conclusions

EEA is an effective modality for the treatment of patients with pituitary apoplexy providing a significant proportion of patients with improvement of their pre-operative symptoms. EEA has a low complication rate even for large and invasive tumors.

Learning Objectives

1. Understand the expected tumor pathology and morphology of patients presenting with pituitary apoplexy.

2. Understand the expected improvement in visual symptoms and cranial nerve deficits when treating pituitary apoplexy with endoscopic endonasal resection.

3. Understand the expected post-operative complications of using the endoscopic endonasal approach for pituitary apoplexy.