

Abstract:

Objective: Our primary goal was to evaluate our experience with performing intraoperative magnetic resonance imaging (iMRI) in a traditional MRI suite during endoscopic endonasal pituitary adenoma resection.

Methods: From March 2008 to February 2013 a single department performed endoscopic endonasal pituitary adenoma resection on 50 patients. Surgical outcomes were compared between the first 25 patients (no iMRI) and the second 25 patients with whom iMRI was used. We evaluated not only the number of total resections in both groups, but also the prolongation of the time of the surgery in the second group. We also evaluated the progression of ophthalmic and endocrinological symptoms in both groups and the rate of complications.

Results: The average length of the surgery was prolonged from 205 to 238 minutes (marginally statistically insignificant). We achieved total adenoma resection in seven cases (28%) in the first group and in 16 cases (64%) in the second group (a statistically significant difference). iMRI was successfully performed on all the patients in the second group without any complications related to patient transport or the execution of the imaging. There were no statistically significant differences in diabetes insipidus occurrence, postoperative visual field improvement, or intraoperative or postoperative cerebrospinal fluid leak associated with iMRI use.

Conclusions: The possibility of monitoring the extent of the pituitary adenoma resection during endonasal approach with iMRI significantly improves the results of the surgery. When building layout is conducive, performing iMRI in a traditional MRI suite is safe.