



Should we use intraoperative MRI if radical resection of pituitary adenoma is planned?

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Introduction

Endoscopic techniques seem to enable more radical endonasal resections of pituitary adenomas. Intraoperative MRI seems to help to increase the radicality as well. Many studies present selected cases with intraoperative MRI. We present almost non-selected series of pituitary adenomas treated endoscopically endonasally with intraoperative MRI.

Methods

Prospective database, all sellar and perisellar lesions included. For evaluation histologically proven adenomas treated in period 2009-2013 were selected. Altogether, 9 pituitary adenomas were resected transcranially, 437 endonasally. Intraoperative MRI was not performed in 24 cases (5,5%) due to various reasons (in majority of cases due to non-compatible pacemaker or other implant, extreme obesity, emergent night surgery, failure of transportation system, etc.). Altogether, 413 pituitary adenomas were resected endonasally with intraoperative MRI. The goal of the surgery (either radical or subtotal resection) was set before the day of surgery.

Results

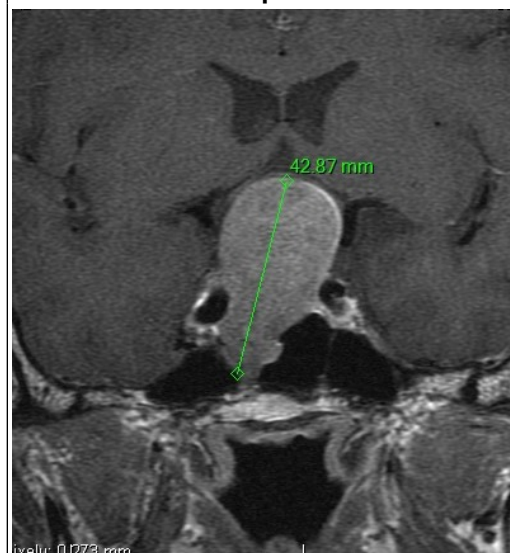
Radical resection was planned in 244 cases. Subtotal resection was planned in cases of cavernous incision lateral to ICA, in parasellar of pituitary adenoma invasion, complex recurrent or multilobulated adenoma.

In 40 cases out of 244 (16,4%) any residual adenoma was disclosed on iMRI. Resection after intraoperative was attempted in 36 cases (14,8%). Final rate of radical resection was 230 (94,3%). Complications: CSF leakage in 4,1%, unilateral amaurosis 0,4%, mortality 0,4%.

Conclusions

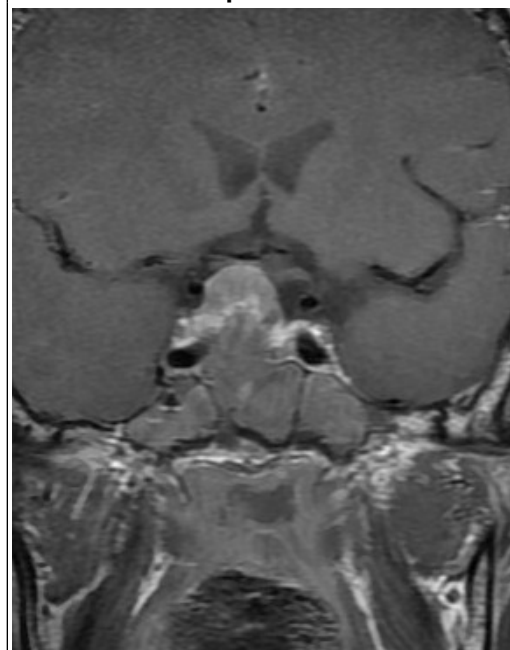
Routine application of intraoperative MRI in planned radical resection of pituitary adenoma is fully justified, enables to increase the rate of radical resections. Routine application of intraoperative MRI shows more clearly the value of this technique than highly selected series of intraoperative MRI. Supported by IGA 14256.

Preop MRI



Preoperative MRI

Intraoperative MRI



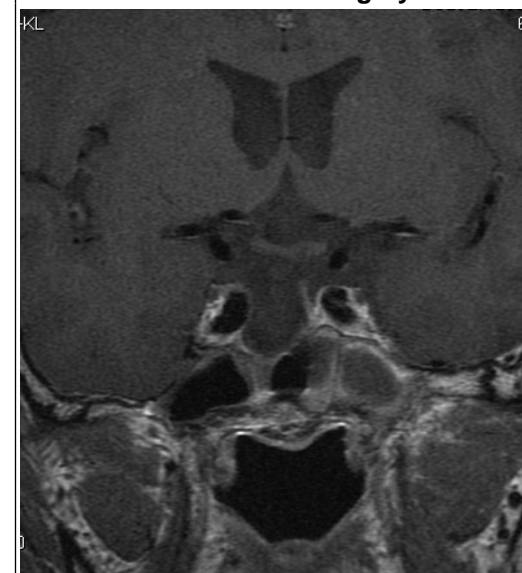
Intraoperative MRI

1 day after surgery



1 day after surgery

3 moths after surgery



3 moths after surgery