

Mammillary Body Angle as a Predictor of Endocrinological and Visual Postoperative Outcomes in Patients with Craniopharyngioma.

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Introduction

Pituitary dysfunction and visual field defects are potential complications following craniopharyngioma resection. Recently, the Mammillary Body Angle (MBA), defined as the intersection of a tangential plane to the base of the mammillary body with a plane tangential to the floor of the fourth ventricle, has been proposed to predict third ventricle involvement. Our aim is to evaluate the usefulness of MBA for third ventricle involvement to predict postoperative endocrinological and/or visual outcome.

Methods

We performed retrospective review of 66 consecutive patients (48 adult and 18 children) diagnosed with craniopharyngioma that underwent Endoscopic Endonasal Surgery between 1999-2016 in a single institution. The MBA were measured on preoperative MRIs and was categorized into one of four groups: (I) <50°; (II) 50°–70°; (III) >70° and group (IV) MBA-not possible to evaluate. These results were correlated with postoperative outcomes.

Results

In 62(94%) patients (45 adults and 17 children) it was possible to measure MBA preoperatively. Thirty (48%) patients were assigned to group (I), 11(18%) to (II), and 21(34%) to (III) and 4(6%) to (IV). Third ventricle invasion was intraoperatively confirmed in 26(39%) cases, 53% in group (I), 36% in (II), 9% in (II) and 100% of patients in group (IV). Preoperative visual impairment was more common in adults (89%) than in children (44%). Anterior pituitary dysfunction was the most common preoperative endocrine finding affecting 50% of patients on each group. Postoperative visual improvement was seen in 46(96%) adults and 16(94%) children regardless of the preoperative MBA. New postoperative endocrine dysfunction was seen in 20 adults, 100% in group (IV) 75% in (I), 66% (II) and 54% (III); and in 9 children, 46% (III), 34% (II), 25% (I) and 0 in group (IV).

Conclusions

Lower and non-identifiable MBA are related with third ventricle involvement and increased risk of postoperative pituitary dysfunction, but has not relationship with visual outcome.

Learning Objectives

- -Reliability of Mamillary body angle (MBA) for third ventricle involvement.
- -Application of MBA for postoperative outcome prediction.
- -Identify MBA with the highest risk of postoperative endocrine dysfunction.
- -Identify MBA with the highest risk of postoperative visual fields defect.
- Differences in outcome on adults and children.

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