Bifrontal Flap Unilateral Interhemispheric Approach to Peri-chiashmatic Craniopharyngioma

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Introduction

Bifrontal flap unilateral interhemispheric approach (BFUIA) to peri-chiashmatic craniopharyngioma is a noble approach to most central craniopharyngiomas. This approach is a more inter-hemispheric than the classical fronto-basal approach and preserves most of the polar bridging veins as well as both the olfactory tracts.

Methods

Bifrontal flap unilateral interhemispheric approach was used to operate the peri-chiashmatic craniopharyngioma in 14 number of patients. Bifrontal flap unilateral interhemispheric approach was designed to provide a wide operative field, better orientation and views of important neural structures & perforating arteries. Moreover, the preservation of pituitary stalk is linked well with postoperative pituitary function. When the Anterior Communicating Artery (ACoA) restricted the operative exposure, the artery was divided safely after assessing the calibers of both the Anterior Cerebral Artery(ACAs).

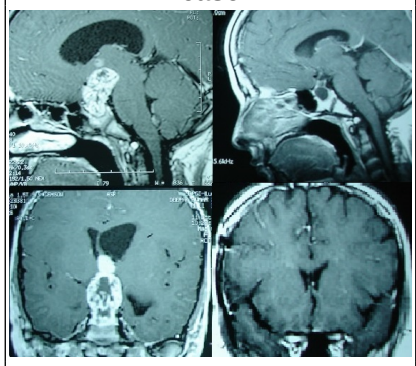
Results

Since 2014, we operated 14 patients using this approach to achieve total or near-total excision of predominantly central craniopharyngiomas. The A-Com Artery was divided in 6 of 14 patients with retro & pre chiasmatic tumors with no early or late complications related to division of the artery. Eleven cases were operated from right inter-hemispheric side and three were operated from the left side, decided by the absence of major cortical sagittal veins. In one case we encountered a venous infract in right frontal lobe and this was managed conservatively with dehydrant thearapy.We achieved visual improvement in 60% cases and preservation of the pituitary stalk was achieved in 70% of patients. There was no operative mortality.

Conclusions

Interhemispheric frontobasal approach to craniopharyngioma has been described before and this gives adequate corridor for craniopharyngiomas.(1, 2) Bifrontal flap unilateral interhemispheric approach is a newer modified approach that allowed adequate wide operative field with better orientation and views of important neural structures & perforating arteries . Some cases this approach also requires division of ACoA artery which is also described in literature (1). Moreover, preservation of the pituitary stalk linked well with postoperative pituitary function. Very rarely parenchymal venous infarct developes and this can be managed conservatively. This type of infarct may occur in any interhemispheric approach(3).

Preoperative (Left) & Postoperative (Right) MRI of a case



Operated Craniopharyngioma through BFUIA

Bi-coronal unilateral craniotomy for BFUIA

Post operative Image

Learning Objectives

Bifrontal flap unilateral interhemispheric approach allowed adequate wide operative field with better orientation and views of important neural structures and perforating arteries without requiring combination with other approaches. Moreover, preservation of the pituitary stalk linked well with postoperative pituitary function.

References

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