

The Occipital Interhemispheric Approach to Lesions of the Pineal Region -- A Single Institution Experience

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Introduction

A surgeon's experience at a single institution using the occipital interhemispheric surgical approach to lesions in the pineal region.

Methods

A retrospective chart review of 21 patients who underwent surgery in this area. This review looked at presenting symptoms, the length of hospital stay, post-operative neurologic deficits, disposition, and the need for a shunting device for the treatment of hydrocephalus.

Occipital Interhemispheric Approach

Lateral position with lumbar drain placed, head in 3-point fixation turned 30 degrees toward floor

Frameless stereotactic neuronavigation system used. Occipital craniotomy is ~5cm diameter at midline

Results

The cohort consisted of twenty one patients with ages ranging from 15 to 83 (mean 41) and shows a wide array of pathology and presenting symptoms. 19 of the patients were discharged home, and the average hospital stay was 9 days (range 3-34). There were no mortalities, and the morbidities included: one patient new onset diabetes insipidus, and three cases of upward gaze palsy, one of which resolved at clinic follow-up. A total of nine patients had ventriculo-peritoneal shunts placed for hydrocephalus.

Length of Hospitalization

Mean hospital stay: 9 days (range 3-34)
Median discharge day: Post-operative Day #4

Disposition: 18/21 discharged home
2/21 discharged to nursing facility
1/21 discharged to rehabilitation facility

Pathology of Lesions

Pineal Cyst (4)	20%
Malignant Germ Cell (3)	15%
Astrocytoma (3)	15%
Pineoblastoma (3)	15%
Pineocytoma (1)	4%
Papillary Tumor (1)	4%
Glioblastoma (1)	4%
Pilocytic Astrocytoma (1)	4%
Arachnoid Cyst (1)	4%
Cavernoma (1)	4%
Metastatic Carcinoma (1)	4%
P3 Aneurysm (1)	4%

Post-Operative Course

43% needed VP Shunts for hydrocephalus
3 before surgery, 6 shunts post-operatively

Zero mortalities

Morbidities

Post-operative Diabetes Insipidus (2)
Pathology was malignant germ cell tumor for both

Upward gaze palsy (3)
Transient in 1 patient (resolved in 4 days)

Conclusions

The surgical treatment of lesions in the pineal gland and posterior third ventricle evolved considerably over the last century. What was an operation associated with an almost prohibitive mortality and morbidity unacceptable by today's standards, is now performed with good outcomes, little post-operative deficits, and a much shorter hospital stay. There are several routes to the pineal gland, the most common being the supracerebellar infratentorial and occipital transtentorial approaches. The present series is a single institution experience using occipital interhemispheric approach, with results showing an ability to treat a variety of lesions, with a relatively short hospital stay, and with minimal morbidity. This series highlights the improvement of neurosurgical techniques over the past few decades to the point where we are now proficient at treating lesions in this once surgically inaccessible area of the brain.

References

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Presenting Complaints

