Posterior interhemispheric transcallosal approach

There are a number of surgical approaches to the posterior third ventricle and pineal region, each with its associated advantages and disadvantages.

OBJECTIVE: To present our experience with the posterior interhemispheric transcallosal approach and to analyze the indications, technique, and outcomes.

METHODS: A retrospective study was conducted to identify and analyze all children and young adults who underwent the posterior transcallosal approach from July 2010 to March 2015. Perioperative data included patient demographics, signs and symptoms on presentation, tumor characteristics (type, origin, and size), complications, and clinical and radiographic outcome at final follow-up.

RESULTS: Twenty-two patients (9 female, 13 male) were identified in 24 cases with a mean age of 10.5 years (range, 3-32 years). The most common tumor type was pineoblastoma (n = 6). Eleven patients underwent gross total resections; 11 underwent subtotal resections; and 2 tumors were biopsied. The intervenous operative corridor was used in 15 cases; the paravenous was used in 9. Of the 22 patients, 19 experienced 31 total postoperative events. There were 12 instances of contralateral weakness. Retraction-related hemiparesis was usually temporary; resection-related hemiparesis lasted longer. There were no complications related to occlusion of one or more bridging cortical veins or from thrombosis of 1 internal cerebral vein. Eight patients have died of tumor progression, and of the remaining 14 patients, only 1 patient to date has developed local progression.

CONCLUSION: The posterior interhemispheric transcallosal approach allows resection of tumors located within the pineal region, posterior third ventricle, and thalamus. New postoperative neurological deficits can occur; however, many will improve significantly or resolve completely over time [1)].

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Patel PG, Cohen-Gadol AA, Mercier P, Boop FA, Klimo P Jr. The Posterior Transcallosal Approach to the Pineal Region and Posterior Third Ventricle: Intervenous and Paravenous Variants. Oper Neurosurg (Hagerstown). 2017 Feb 1;13(1):77-88. doi: 10.1227/NEU.0000000000001268. PubMed PMID: 28931256.