Surgical Treatment of Large Colloid Cysts in Patients Treated Previously with Ventriculoperitoneal Shunts

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Introduction
Colloid cysts are the most common tumor occurring in the anterior third ventricle. Though benign, the cyst can enlarge and obstruct CSF flow, leading to elevated intracranial pressure, progressive headaches, and sudden death. External ventricular drains are typically indicated in the primary treatment of obtunded patients with elevated intracranial pressure. Definitive treatments are surgical, ranging from CSF flow diversion to total resection.

Objectives
1. To evaluate surgical outcomes in colloid cyst patients previously treated with CSF diversion.
2. To suggest that CSF diversion can be a temporary measure in patients who are not operable candidates for definitive resection.

Discussion
While it is widely known that CSF diversion is not the definitive mode of treatment for colloid cysts, we have recently encountered three patients in whom CSF diversion was ultimately chosen as the first method of treatment. There have been reports of patients with colloid cysts undergoing CSF diversion, however there is limited data regarding the outcomes and management of patients initially managed with a shunt. The majority of symptomatic patients initially undergo microsurgical or endoscopic resection of the cyst. A VP Shunt is often the secondary procedure after a resection attempt fails to treat the hydrocephalus, occurring in up to 6% of patients in a recent meta-analysis.

Methods
In this study, we retrospectively evaluate patients with colloid cysts that were initially treated with CSF diversion via ventriculoperitoneal shunt, followed by definitive surgical resection.

Results
Three patients, two females ages 37 and 39, and one male age 38, met the inclusion criterion for this study. All patients presented clinically with progressive headache, nausea, and vomiting. Shunts had been previously placed either due to cardiovascular instability, inability to fully resect the tumor, or treatment in another country. Patients underwent a bi-frontal craniotomy with transcerebral interfornical resection of the colloid cysts. The post-operative course was uneventful in all cases and the patients returned to their baselines.

Conclusions
In cases of symptomatic colloid cysts, either microsurgical or endoscopic resection should be considered the first line of treatment. Though surgical management is the gold standard of treatment, CSF diversion can be utilized in for symptomatic treatment in cases where the patient is too unstable for surgical resection or the facility lacks the proper resources for complete resection. CSF diversion remains a temporary solution, and after stabilizing the patient, or when proper resources become available, definitive resection of the cyst should then take place. Further studies in patients who initially undergo VP shunt placement may shed light on shunt dependence after definitive treatment.

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