Third ventricle colloid cyst case series

A retrospective descriptive study of patients with colloid cysts of the third ventricle undergoing neuroendoscopic resection using an ultrasonic aspirator between 2016-2023. Clinical, radiological, and procedural variables were studied. Mean, median and range were analyzed for quantitative variables and percentages and frequencies for qualitative variables. Ibáñez-Botella et al. present a series of 11 patients with colloid cysts of the third ventricle. The mean age was 44 years (27-69). All had biventricular hydrocephalus, with a mean cyst diameter of 15 mm (9-20). The lateral ventricle was accessed using the transforaminal approach in seven patients and the transchoroidal approach in three patients. All patients underwent septostomy. The mean endoscopy time was 40 min (29-68). Complete resection was possible in 10 patients. Median follow-up was 16 months (1-65) with 100% clinical improvement. At the end of follow-up, no patient had recurrence of the lesion. Based on the experience, the ultrasonic aspirator can be used safely and effectively for the resection of colloid cysts of the third ventricle, achieving high rates of complete resection with minimal postoperative complications [1].

2022

A prospective registry of patients with colloid cysts was maintained between 1996 and 2021. Data pertaining to a family history of colloid cyst was collected retrospectively; self-reporting was validated in each case by medical record or imaging review. Frequency of patients with a documented first-degree family member with a colloid cyst based on self-reporting was calculated. The rate of familial co-occurrence within our series was then compared to a systematic literature review and aggregation of familial case studies, as well as population-based prevalence rates of sporadic colloid cysts.

Results: Thirteen cases with affected first-degree relatives were identified in our series. Of the entire cohort, 19/26 were symptomatic from the lesion (73%), 12/26 (46.2%) underwent resection, and 2/26 (7.7%) had sudden death from presumed obstructive hydrocephalus. The majority of transmission patterns were between mother and child (9/13). Compared with the estimated prevalence of colloid cysts, our FCC rate of 13 cases in 383 (3.4%) estimates a greater-than-chance rate of co-occurrence.

Conclusion: Systematic screening for FCCs may facilitate early recognition and treatment of indolent cysts, thereby preventing the rapid deterioration that can occur with an unrecognized third ventricular tumor. Furthermore, identifying a transmission pattern may yield more insight into the molecular and genetic underpinnings of colloid cysts [2].

2018

A PubMed literature search was performed to identify reported patients who presented with acute neurological deterioration with radiographic or histopathologic diagnosis of a colloid cyst. Demographic data, presenting symptoms, physical exam, surgical interventions, and outcomes were recorded. Analysis included 140 patients. Mean cyst size was 2.12 cm in males and 1.59 cm in females ($p = 0.155$), and 1.64 cm in patients who survived and 2.05 cm in patients who died ($p = 0.04$). Minimum cyst size was 0.4 cm in females and 0.8 cm in males. All patients without surgical intervention died, versus 48% with surgical intervention ($p < 0.0001$). Patient age was not significantly

associated with outcome. Patients with hydrocephalus who have symptomatic colloid cysts are at extremely high risk for acute neurological deterioration and sudden death. Larger cyst size was associated with higher mortality, regardless of intervention. Prompt surgical intervention in extremis can lead to survival in approximately half the patients. Females, even with smaller cyst sizes, may be more likely to die before any intervention and may therefore benefit from more aggressive treatment approaches [3].

2016

A study included 163 colloid cysts, more than half of which were discovered incidentally. More than half of the incidental cysts (58%) were followed with surveillance neuroimaging (mean follow-up 5.1 years). Five patients with incidental cysts (8.8%) progressed and underwent resection. No patient with an incidental, asymptomatic colloid cyst experienced acute obstructive hydrocephalus or sudden neurological deterioration in the absence of antecedent trauma. Nearly half (46.2%) of symptomatic patients presented with hydrocephalus. Eight patients (12.3%) presented acutely, and there were 2 deaths due to obstructive hydrocephalus and herniation. Beaumont et al identified several factors that were strongly correlated with the 2 outcome variables and defined third ventricle risk zones where colloid cysts can cause obstructive hydrocephalus. No patient with a lesion outside these risk zones presented with obstructive hydrocephalus. The Colloid Cyst Risk Score (CCRS) had significant predictive capacity for symptomatic clinical status (area under the curve [AUC] 0.917) and obstructive hydrocephalus (AUC 0.845). A CCRS ≥ 4 was significantly associated with obstructive hydrocephalus ($p < 0.0001$, RR 19.4).

Patients with incidentally discovered colloid cysts can experience both lesion enlargement and symptom progression or less commonly, contraction and symptom regression. Incidental lesions rarely cause acute obstructive hydrocephalus or sudden neurological deterioration in the absence of antecedent trauma. Nearly one-half of patients with symptomatic colloid cysts present with obstructive hydrocephalus, which has an associated 3.1% risk of death. The CCRS is a simple 5-point clinical tool that can be used to identify symptomatic lesions and stratify the risk of obstructive hydrocephalus. External validation of the CCRS will be necessary before objective surgical indications can be established. Surgical intervention should be considered for all patients with CCRS ≥ 4, as they represent the high-risk subgroup [4].

From a review of 94 patients, 10 (10.6%) patients had evidence of an extruded intraventricular solid fragment (median follow-up 4 months; range 0.5-115 months). Of the evaluable patients, 7 of 9 patients had T1-weighted hyperintense and T2-weighted hypointense cysts on preoperative scans. Seventy-eight percent of the extrusions were on the same side as the endoscopic entry. Three patients demonstrated early fragment migration, but not after 8 months of radiological follow-up. All evaluable patients demonstrated improvement in their hydrocephalus, and none suffered a complication attributable to the intraventricular extruded fragments.

Intraventricular extruded colloid fragments can occur after endoscopic resection, with the possible risk demonstrated as cyst Hypointensity on preoperative T2-weighted images. The finding does not seem to result in any clinical morbidity, and radiographic involution is the rule. Migratory capacity, however, does exist and justifies a more frequent imaging surveillance schedule and consideration for removal [5].

1)
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