Colloid cyst

Colloid cysts are benign intracranial tumors usually occurring in the roof of the third ventricle.

Natural history

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.

During this 25-year interval, 162 patients with colloid cysts were examined and cared for at our center. Sixty-eight patients (42%) were thought to be asymptomatic with regard to their colloid cyst and observation with serial neuroimaging was recommended. The mean patient age was 57 years at the time of diagnosis (range 7-88 years) and the mean cyst size was 8 mm (range 4-18 mm). Computerized tomography scanning revealed a hyperdense cyst in 49 (84%) of 58 patients. Three patients were excluded from the study because they died of unrelated causes within 6 months of scanning and seven patients were lost to follow-up review. Clinical follow-up evaluation was available at a mean of 79 months (range 7-268 months) in the remaining 58 patients. The numbers of patients who participated in follow-up review at 2, 5, and 10 years after diagnosis were 40, 28, and 14, respectively. The incidences of symptomatic progression related to the cyst were 0%, 0%, and 8% at 2, 5, and 10 years, respectively. No patient died suddenly during the follow-up interval. Two (6%) of 34 patients in whom follow-up imaging was performed either exhibited cyst growth (one patient) or experienced hydrocephalus (one patient) at a mean of 41 months after diagnosis (range 4-160 months).

Patients in whom asymptomatic colloid cysts are diagnosed can be cared for safely with observation and serial neuroimaging. If a patient becomes symptomatic, the cyst enlarges, or hydrocephalus develops, prompt neurosurgical intervention is necessary to prevent the occurrence of neurological
decline from these benign tumors 2).

**Clinical presentation**

Colloid cysts have been associated with acute neurologic deterioration and **sudden death**.

May be non-specific and heterogeneous. The problems are frequently associated with development of **hydrocephalus**, these **cysts** may cause.

In some patients the colloid cyst caused a sudden deterioration of **consciousness** due to an acute hydrocephalus in other the cyst was discovered accidentally, during the course of epileptic seizures treatment and due to chronic headache with quanti- and qualitative deterioration of consciousness in the setting of chronic hydrocefulus, respectively 3).

see **Fatal colloid cyst**.

see **Colloid Cyst Risk Score**.

**Treatment**

see **Colloid cyst treatment**.

**Case series**

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 4).

**2016**

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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.

Case reports

2016

Dorsch and Leonardo describe the case of a 42-year-old man who was found to have a colloid cyst of the third ventricle while undergoing evaluation for a dural arteriovenous fistula. They highlight the rotational, or “swiveling,” method for extraction of the colloid cyst.