Colloid cyst treatment

Optimal treatment of colloid cyst remains controversial. Initially, shunting without treating the cyst was advocated 1).

The nature of the obstruction (both foramina of Monro) requires bilateral ventricular shunts (or, unilateral shunt with fenestration of the septum pellucidum). Presently, one form or another of direct surgical treatment is usually recommended for some or all of the following reasons:

1. to prevent shunt dependency
2. to reduce the possibility of tumor progression
3. since the mechanism of sudden neurologic deterioration may be due to factors such as cardiovascular instability from hypothalamic compression and not due to hydrocephalus.

Options

The treatment of colloid cysts has evolved rapidly since the first successful excision of a colloid cyst via the transcortical transventricular approach by Walter Dandy in 1921 2). This was followed closely by a transcallosal approach by Greenwood in 1949 3).

Surgical resection of recurrent colloid cysts should focus on complete removal of the cyst wall to minimize the chance of recurrence. Microsurgery has been shown to provide the highest success rates for cyst wall resection and lowest rates of recurrence and is therefore recommended for patients undergoing surgery for primary and recurrent colloid cysts 4).

Metaanalysis and systematic review

In a metaanalysis and systematic review microsurgical resection of colloid cysts is associated with a higher rate of complete resection, lower rate of recurrence, and fewer reoperations than with endoscopic removal. However, the rate of morbidity is higher with microsurgery than with endoscopy

This meta-analysis of 1278 patients comparing endoscopic and various microsurgical techniques found that the microsurgical group had a significantly greater extent of resection (96.8% vs. 58.2%), lower rates of recurrence (1.48% vs. 3.91%), and lower rates of reoperation than the endoscopic group (0.38% vs. 3.0%). Both groups had similar rates of mortality (1.4% vs. 0.6%) and shunt dependency (6.2% vs. 3.9%). Overall, the complication rate was lower in the endoscopic group than in the microsurgical group (10.5% vs. 16.3%). Within the microsurgery group, the transcallosal approach had a lower overall morbidity rate (14.4%) than the transcortical approach (24.5%) 5).

An analysis of administrative claims data revealed few differences in surgical complications following colloid cyst excision via microsurgical and endoscopic approaches. Post-operative seizures and thirty-day readmissions were seen at higher frequency in patients who underwent microsurgical resection.
Despite similar complication profiles, patients undergoing microsurgical excision experienced higher index admission costs and 90-day aggregated costs suggesting that complications may have been more severe in this group  

Incidental colloid cysts are frequently managed with surveillance imaging rather than surgical excision. This approach is born out of their purported indolent growth pattern and the surgical morbidity associated with microsurgical removal. The advent of endoscopic colloid cyst removal may offer renewed assessment of these patients who carry a risk of acute neurological deterioration. An evidence-based recommendation should weigh the risks of operative treatment.

Age and cyst diameter were not correlated with the absence or presence of symptoms in patients with a colloid cyst of the third ventricle. Operative results were highly favorable in both groups and did not reveal a higher risk of morbidity in the patient presenting with an incidental lesion. The results support endoscopic resection as a legitimate therapeutic option for patients with incidental colloid cysts. Generalization of the operative results should be cautiously made, since this is a limited series and the results may depend on the degree of neuroendoscopic experience.

**Using natural history for treatment decisions**

A review of 58 asymptomatic patients (average age 57 years) with incidentally discovered colloid cysts of the third ventricle with mean follow up of 79 months demonstrated the incidence of symptomatic worsening at 2, 5, and 10 year follow up to be 0%, 0%, and 8%, respectively. Of the 34 patients who obtained follow up imaging, 32 demonstrated no change in cyst size or ventricular caliber. The average age of these patients was significantly higher than that of the patients undergoing surgery for symptomatic lesions (57 vs. 41) and thus may reflect a patient cohort with differing natural histories.

**Endoscopy**

see Colloid cyst endoscopy.

1) Torkildsen A. Should Extirpation be Attempted in Cases of Neoplasm in or Near the Third Ventricle of the Brain? Experiences with a Palliative Method. J Neurosurg. 1948; 5:249–275
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Last update: 2020/02/18 08:28