Transforaminal transchoroidal endoscopic colloid cyst resection

Colloid cyst endoscopys can be approached using a transforaminal approach (TA) or a transforaminal-transchoroidal approach (TTA). However, TTA may result in better exposure compared to TA. Intraventricular cysticercosis can be cured with an endoscopic procedure alone, but if pericystic inflammation and/or ependymal reaction are seen, third ventriculostomy may be recommended. Tumor biopsies have yielded successful diagnosis rates of up to 100%, but tumor location, total specimen size, endoscope type, and vigorous coagulation on the tumor surface may affect diagnostic accuracy. An ideal indication for tumor excision is a small tumor with friable consistency and little vascularity. Tumor size, composition, and vascularity may influence a complete resection. SACs and intraventricular cysticercosis can be treated successfully using endoscopic procedures. Endoscopic procedures may represent an alternative to surgical options for colloid cyst removal. Solid tumors can be safely biopsied using endoscopic techniques, but endoscopy for tumor resection still results in considerable challenges. [1].

The option of opening the choroidal fissure (transventricular-transchoroidal approach) during the procedure can address third ventricle colloid cysts that do not emerge sufficiently through the foramen of Monro without increasing procedure-related morbidity [2].

Tawk et al. described the endoscopic transforaminal transchoroidal (ETTC) approach to the third ventricle with opening of the choroidal fissure to enlarge the posterior foramen of Monro for treatment of various third ventricular diseases.

They completed a retrospective review of a prospectively collected database at 3 tertiary academic facilities. The search included patients who underwent endoscopic transcranial procedures between 2005 and 2018. All 13 patients included in this study were treated using the ETTC approach for lesions in the third ventricle using a rigid 6-mm working endoscope.

There were 7 women and 6 men with a mean age of 44 years (standard deviation, 16 years). Third ventricular diseases included colloid cyst, craniopharyngioma, anaplastic astrocytoma, subependymal giant cell astrocytoma, metastatic lung adenocarcinoma, and lymphoma. Resection was complete in 7 patients and near complete in 4. Two patients had biopsy of a thalamic tumor and third ventriculostomy. The mean follow-up time was 44 months (standard deviation, 36 months; range, 9-121 months). There were no intraoperative or postoperative complications related to the approach.

ETTC approach is a safe and effective method for enlargement of the foramen of Monro. The approach improves maneuverability of the endoscope and allows a broad range of movement and increased angulation within the foramen of Monro. Attention to anatomy is paramount to avoid injury to the venous structures and fornix. [3].

The combined endoscopic transforaminal-transchoroidal approach (ETTA), providing exposure of the entire cyst and a better visualization of the tela choroidea, could increase the chances of achieving a

complete cyst resection. Between April 2005 and February 2011, 19 patients with symptomatic colloid cyst of the third ventricle underwent an endoscopic transfrontal-transforaminal approach. Five of these patients, harboring a cyst firmly adherent to the tela choroidea or attached to the middle/posterior roof of the third ventricle, required a combined ETTA. Postoperative MRI documented a gross-total resection in all 5 cases. There were no major complications and only 1 patient experienced a transient worsening of the memory deficit. To date, no cyst recurrence has been observed. An ETTA is a minimally invasive procedure that can allow for a safe and complete resection of third ventricle colloid cysts, even in cases in which the lesions are firmly attached to the tela choroidea or located in the middle/posterior roof of the third ventricle. [4].

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