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EXPERIENCE 10 CASES OF ENDOSCOPIC COLLOID CYST EXCISION

Neurosurgery

Dr Shiteez Agrawal* MCH Neurosurgery, Assistant Professor Department of neurosurgery, Mahatma Gandhi Medical College Sitapura Jaipur. *Corresponding Author

Dr Jitendra Singh Verma MCH Neurosurgery, Associate Professor Department of neurosurgery, Mahatma Gandhi Medical College Sitapura Jaipur.

Dr Arvind Ranwa MS General Surgery, Senior Resident Department of neurosurgery , Mahatma Gandhi Medical College Sitapura Jaipur.

Dr Gograj Gadhwal MCH Neurosurgery, Assistant Professor Department of neurosurgery, Mahatma Gandhi Medical College Sitapura Jaipur.

Dr Bhawani Shanker Sharma Professor and Head of Department, Department of neurosurgery, Mahatma Gandhi Medical college Sitapura Jaipur.

ABSTRACT

Background- Colloid cyst is a benign condition of the third ventricle. The operative approach of this benign condition varied from the microscopic transcallosal to minimal invasive endoscopic excision of colloid cyst. Endoscopic approach is currently most popular approach, associated with minimal morbidity and mortality(1,2).

Method-Retrospective study of all the patients who underwent either endoscopic or endoscopic assisted excision from 2017 to 2019. Retrospectively data was collect including clinical feature, radiology finding, intraoperative difficulty and outcome.

Result- In our study 6 patients are male and 4 are female. Maximum number of cases occurred in second to third decade. In 4 patients we did endoscopic assisted excision either due to calcified cyst wall, posterior attachment of cyst wall or intraoperative hemorrhage.

Conclusion- complete excision of colloid cyst can be possible with endoscopic technique with minimal recurrence rate

KEYWORDS

colloid cyst, endoscopy

INTRODUCTION

Colloid cyst are the benign tumor of anterior part of third ventricle attach to tela choroidea in roof of the ventricle(3). The embryological origin of the cyst remain uncertain. Initial studies found of be neuroepitheium origin and later work suggestive of the endodermal origin based on ultrastructure finding(4,5). Clinical presentation varied from mild headache to features of hydrocephalus and raised intracranial pressure including paroxysmal headache, vomiting, nausea, drop attack, gait disturbance, behavioral changes, weakness of lower limbs, new learning disability and sudden death inpatient with severe acute hydrocephalus(6,7,8). Contrast MRI remain investigation of choice for colloid cyst. T1 and T2 shows variable signal intensities depend upon protein content of the cyst. Most of colloid cyst are does not enhance with contrast but help in to differentiate with other pathology in same location like Rathke cyst and Craniopharyngioma. A well-defined hyperdense round or oval mass seen on computed tomography.

Cyst less than 1 centimeter and asymptomatic can be observe, but there are reports of sudden death in these patients(9). Surgical high risk patients and those with symptomatic hydrocephalus with acute deterioration can be managed with either ventriculoperitoneal shunt or external ventricular drain. Stereotactic aspiration alone associated with high recurrence rate. Microscopic approach include transcallosal and transcortical approach. Transcallosal approach is the gold standard approach for colloid cyst. It a direct, safe, short operative time and minimal morbidity(10). There are chances of post-operative complication includes disconnection syndrome, venous infarct, injury to fornix, meningitis, CSF leak and cognitive dysfunction(11).

Endoscopic approach is minimally invasive approach with minimal injury to cortex and corpus callosum. Difficulty in performing bimanual dissection sometime lead to incomplete excision of cyst wall and hemorrhage(11,12).

MATERIALAND METHOD

Study was conducted from 2017 till July 2020. Total 10 patients are included in either endoscopic or endoscopic assisted excision of colloid cyst was done. Retrospectively we collect the data related to the history and clinical examination. All the patients undergone either computed tomography or magnetic resonance imaging of the brain before the surgery. Intra operative difficulty and extend of resection was noted. Then patients was discharged and follow up for any neurological recurrence or repeat imaging was done after 6 month to 1 year.

RESULTS

We have included 10 patients in our study in which 6 patients are male and 4 patients are female. In our study 6 patients are in age group of 10-30 years and 4 patients are in 30-60 years group with mean age of 28.6 years. Patients mainly presented with symptoms like headache, vomiting, vision loss, drop attack, seizure, memory loss, urinary incontinence, gait ataxia and memory loss. Two of our patients presented with altered sensorium in emergency department and undergone shunt surgery before definitive surgery. The pre-operative computed tomography scan of patients shows isodense to hyperdense lesion. Magnetic resonance imaging of the patients shows T1- isointense to hypointense lesion and T2-hyperintense lesion. One of patients has T1-hypointense and T2- hypointense lesion and other feature suggestive of calcified colloid cyst. In 6 patients we have done complete endoscopic excision of the cyst and if require coagulation of small part of capsule that remain adhere to choroid plexus. In 4 case we have to do endoscopic assisted because of either thick calcified wall and contain of the cyst, due to hemorrhage from choroid plexus or posterior attachment of cyst. All the patients undergone follow up scan none of the patients had recurrence except one with thick and calcified cyst where subtotal excision was done but patient is clinically asymptomatic till present.

Table1- Age And Sex Distribution

	Male	Female
10-30yrs	3	3
30-60yrs	3	1
>60yrs	-	-

Table2- Clinical Feature

Headache	8
Vomiting	3
Gait ataxia	1
Urinary incontinence	1
Memory loss	1

Vision loss	4
Motor deficit	1
Drop attack	2
Seizure	2

DISCUSSION

Colloid cyst is a benign lesion arising from the roof of third ventricle. It most commonly present in male as Compare to female. Most of the previous studies had shown that it is commonly present from fourth decade to seven decade of life which is different from our study which shows our maximum case occur in second to third decade of life.

In our study patients are presented with headache(80%), vomiting(30%), vision loss(40%), drop attack(20%), seizure(20%) and urinary incontinence(10%) with is similar to the previous studies. Out of them two of our patient presented in emergency department with altered sensorium which is quite rare in other series. Most of our patients have hyperdense lesion on their computed tomography scan which is similar to previous studies(13).

Two technique has been described in literature for endoscopic excision of the colloid cyst (1) trans-foraminal (2)trans-septal approach. We have use trans foraminal approach in most of our cases(11,12). We have four case of endoscopic assisted removal because one patient presented with calcified colloid cyst which is difficult to remove endoscopically, in two we had difficulty in complete removal to cyst wall due to posterior attachment of cyst wall and dense adhesion and in one we have intraoperative hemorrhage with does not stop after prolong irrigation. Mishra et al discussed similar difficult encountered during calcified colloid cyst removal(10). Yadav et al mention that troublesome bleeding can occur from the cyst attachment site(11).

CONCLUSION

In retrospective analysis of 10 patients we can say that endoscopic technique is safe and effective method of colloid cyst excision. Complete to near total resection with minimal recurrence and good patient acceptance. Endoscopic technique is the technique of choice for the third ventricle colloid cyst.

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Conflict Of Interest: No

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