

Giant Colloid Cyst of Third Ventricle: A Rare Case Report

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Abstract

Colloid cysts are rare non-neoplastic true epithelium-lined cysts of the central neuraxis, commonly arising in the anterior part of the third ventricle. They have a wide spectrum of clinical presentation being asymptomatic for a long time while some can present with paroxysmal headache, gait disturbance, nausea, vomiting, behavioral changes, weaknesses of lower limbs, impaired memory, new learning disability, and sudden death. Patients may remain asymptomatic until cyst size more than 3 cm are defined as huge or giant colloid cyst. Only a few cases of huge colloid cysts have been reported in the literature. We present a case of a 62-year-old man with huge colloid cyst of the third ventricle causing obstructive hydrocephalus.

Key words: Anterior third ventricle, Giant colloid cyst, Hydrocephalous, Intraventricular cyst

INTRODUCTION

The colloid cysts are believed to be derived from either primitive neuroepithelium of the tela choroidea or from endoderm. Colloid cysts are benign lesions which constitute 0.55-2% of all intracranial tumors and comprise 55% of the third ventricle's lesions.¹

Approximately, three persons per million per year are affected from this condition.² Colloid cysts are commonly located near the anterior part of the third ventricle, close to the foramen of Monro. Most of the patients remain asymptomatic for the long time while some can present with paroxysmal headache or nonspecific symptoms to sudden death. Most of them are small in size <1 cm. The symptoms usually correlate with the location and the rapidity of increase in size and development of obstructive hydrocephalus. We report a rare case of huge colloid cyst.

CASE REPORT

The 62-year-old male patient presented with intermittent headache for 3 months and occasional drop attacks. On clinical examination, patient had no neurological deficits. Fundoscopy revealed papilledema. Hormonal levels were within normal limits.

Computerized tomography (CT) showed 3.2 by 2.8 cm non-contrast enhancing well-circumscribed homogeneously hyperdense mass extending from the third ventricle to lateral ventricles causing obstructive hydrocephalus (Figure 1).

Magnetic resonance imaging (MRI) shows isointense on T1 and T2 WS and hyper intense on fluid attenuated inversion recovery sequences suggestive of the third ventricular colloid cyst causing obstructive hydrocephalus (Figures 2-5).

Right frontal craniotomy was done, and frontal horns are approached through midfrontal gyrus transcortical - Transventricular approach. The huge bluish cystic lesion was identified in the lateral ventricle protruding through the foramen Monro.

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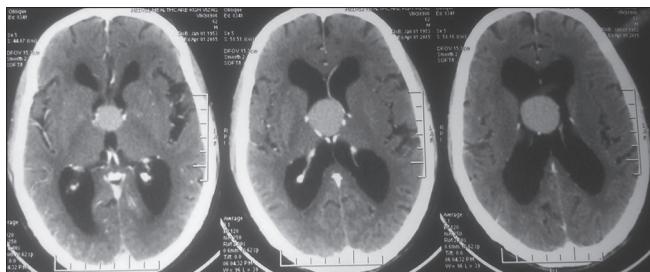


Figure 1: Contrast-enhanced computed tomography brain-S/O 3.2 cm x 2.8 cm giant non enhancing well-circumscribed hyperdense colloid cyst in third ventricle extending into lateral ventricles with obstructive hydrocephalus

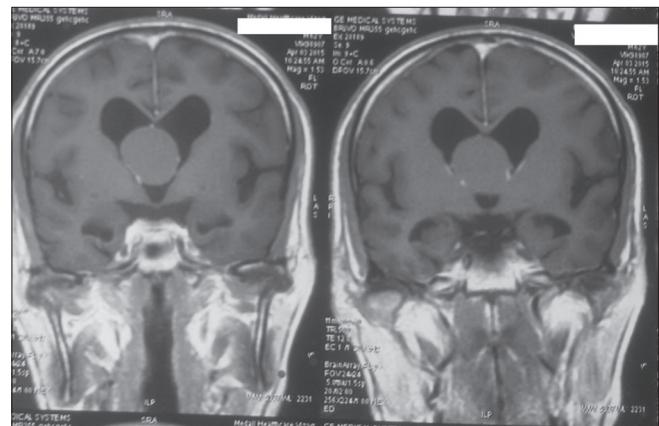


Figure 4: Coronal T1



Figure 2: Magnetic resonance imaging brain axial T1 (WT)

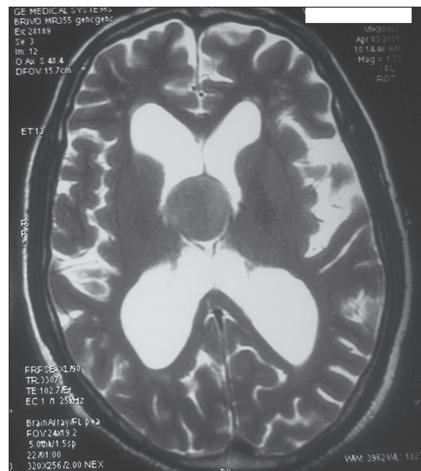


Figure 5: Axial T2

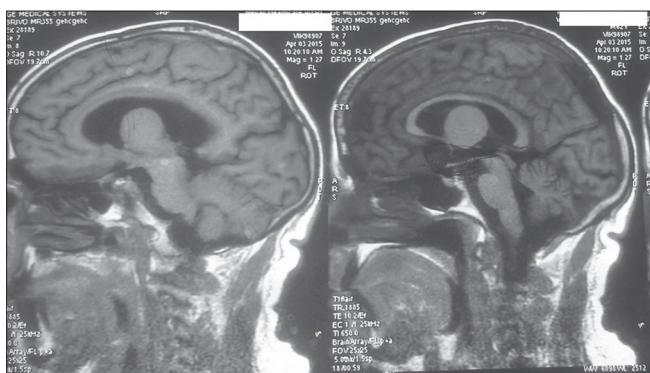


Figure 3: Sagittal T1

Soft gelatinous viscous cystic component was aspirated from the cyst to decompress it. With meticulous dissection and gentle separation, cyst wall was completely excised. His intra-operative and post-operative period were uneventful. The patient was discharged on 10th post-operative period with no neurological deficit histopathological report has confirmed the diagnosis of colloid cyst (Figure 6). At 6 months of follow-up, he has no fresh neurological deficits and follow-up CT scan has mild hydrocephalus (Figure 7).

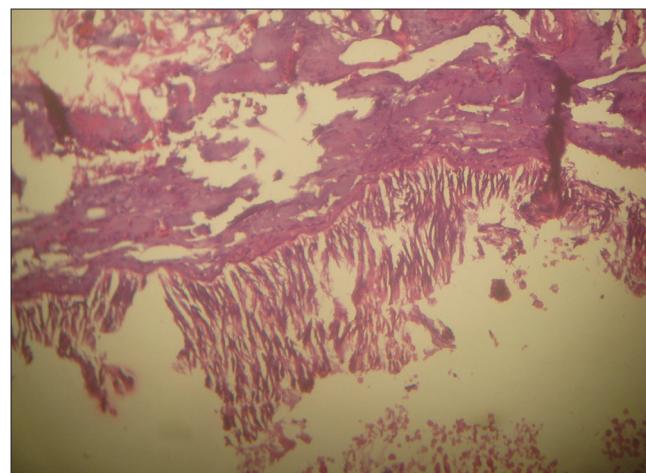


Figure 6: Histopathological slide of the colloid cyst: Pseudo stratified columnar ciliated epithelium with focal flattened and fibrocollagenous tissue with pink proteinaceous material toward the lumen side

DISCUSSION

Colloid cysts are congenital lesions, either primitive neuroepithelium of the tela choroidea or endodermal



Figure 7: Post-operative computerized tomography scan brain axial section

in origin, classically located in the third ventricle. Derived from the Greek word “kollobos” meaning glue, cyst contains mucoid and gelatinous matrix commonly lined by cuboidal and columnar epithelium or pseudo columnar or columnar mucous secreting epithelium.^{1,2} Approximately, one persons per million per year are affected by this entity with the prevalence of 1/8500 persons.¹ Though colloid cysts are congenital lesions, these cysts commonly present in fourth through the seventh decade of life, but cases have been reported in pediatric age group also.³

Colloid cysts are benign lesions and carry good prognosis and are mostly asymptomatic. If symptomatic, colloid cysts usually produce non-localizing signs of raised intracranial pressure usually associated with changing head position. Cysts larger than 3 cm called “giant colloid cysts.”^{1,4,5} Size of the colloid cyst usually ranges between 0.5 and 2.5 cm³. Most of the cysts are usually <1 cm and are asymptomatic, but size is not a good predictor of the outcome as sudden neurological decline and death can occur at any size, though such occurrences have been documented with cysts larger than 1-1.5 cm.^{2,3,6} Acute blockage of cerebrospinal fluid with instant brain herniation is one of the proposed mechanisms of sudden death. Another is the disturbance of hypothalamus-mediated cardiovascular reflex control.³ Hence, it is advised for a regular follow-up if asymptomatic and recommended to intervene if the patient become symptomatic or when the size is more than 1 cm. MacDonald *et al.* stressed that younger patients are more likely to become symptomatic during their lifetime and require surgery. Goyal *et al.* have emphasized that pediatric colloid cysts have a higher incidence of sudden worsening and a worse clinical profile as compared to adult colloid cysts.³

Though the rate of growth of the colloid cyst is uncertain, and it is not possible to predict which colloid cysts will become symptomatic, one predictor is MRI (T2-weighted images) where in colloid cysts with hyperintense signals on T2-weighted images were suggested to have higher water content and would be more capable of further cyst expansion. The low signal intensity on T2-weighted images have a higher intracystic viscosity contents with an increased difficulty to suck the contents while most high-signal lesions are easy to aspirate.⁷ These lesions are usually hyperdense on CT scan.⁸ One of the study has postulated from their observations in a study of 122 that there is a correlation between the CT scan cyst density with viscosity of the cystic contents. So, the colloid cysts with hyper density on CT scan can be managed by cyst aspiration more successfully compared with hypo dense cysts.³ The MRI signal intensity of colloid cysts is notoriously variable, with any combination of T1- and T2-signal intensities. The most common appearance is hyper intensity in T1-weighted sequences and iso to hypo intensity in T2-weighted sequences. This variation is believed to be a result of the proteinaceous fluid, as well as the paramagnetic effects of the metal ions in the fluid and hemorrhage.^{7,8}

CONCLUSION

Colloid cysts are rare benign slowly growing cystic lesions commonly diagnosed incidentally on brain imaging for their small size and asymptomatic nature. These cysts are to be operated if they become symptomatic as sudden deterioration even to the extent of death can occur. Cyst can acquire large size and cysts larger than 3 cm called as huge cysts are very rare. We report one such rare case in Indian scenario second to one reported by VHS hospital, Chennai.⁴

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