

## Colloid cyst of the third ventricle

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**Section:** Neuroradiology

**Imaging Technique:** MR

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Case Type: Clinical Cases

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**Patient:** 21 years, male

### Clinical History:

A 21 year-old male patient presented with a history of ventriculoperitoneal shunt operation five months ago due to obstructive hydrocephalus secondary to a cystic mass of the third ventricle. Prior to the surgical procedure he had chronic headaches for about three to four years.

### Imaging Findings:

A 21 year-old male patient presented with a history of ventriculoperitoneal shunt operation five months ago due to obstructive hydrocephalus secondary to a cystic mass of the third ventricle, detected in the cranial computed tomography (CT). Prior to the surgical procedure he had chronic headaches for about three to four years. A control MRI study was performed on a 1.5 T MR scanner, SE T1, FSE T2, FLAIR, post-gadolinium SE T1 sequences on three planes were obtained. MR pictures showed no evidence of hydrocephalus anymore, and a cystic well-delineated third ventricle mass with homogeneous hyperintense signal intensity characteristic, with a peripheral contrast enhancement of the fibrous capsule.

**Discussion:**

Colloid cysts represent 0.5-1% of primary brain tumors. They exclusively arise from inferior aspect of septum pellucidum, and protrude into anterior portion of the third ventricle between columns of fornix, however some authors reported the presence of the colloid cysts in unusual locations such as posterior fossa, lateral ventricles. Histopathologically colloid cysts are made up of mucin secreting ciliated and columnar epithelium, and a tough fibrous capsule. The patients are typically young adults, male are more affected than females. The clinical findings are episodes of positional headaches due to transient obstruction secondary to ball valve mechanism at foramen of Monro, gait apraxia, changes in mental status with or without dementia due to increased intracranial pressure, papilledema. An acute hydrocephalus and secondary tonsillar herniation may cause sudden death. On CT, the density of the cyst is isodense to cerebrospinal fluid (CSF) in 20 % of the cases, and hyperdense to CSF in 80 % of the cases. The third ventricle is enlarged to accommodate cyst within it, lateral ventricles are enlarged due to obstruction of foramen of Monro. On MRI, the cysts are hyperintense on both T1 and T2-weighted sequences in 60 % of the patients, due to protein and mucin content of the lesion, however they show variable signal intensity characteristics in the rest of the patients, depending on the content of cyst. A thin rim enhancement may be observed around the cyst, representing fibrous capsule, following IV contrast administration. Endoscopic surgical resection is the radical mode of treatment, however ventricular shunting for obstructive hydrocephalus is an alternative way. Prognosis is good following the surgery, however hydrocephalus may persist in up to 30% of the patients. Differential diagnosis from the same site located masses such as meningioma, ependymoma is not difficult due to its typical features on MRI.

**Differential Diagnosis List:** Colloid cyst of the third ventricle

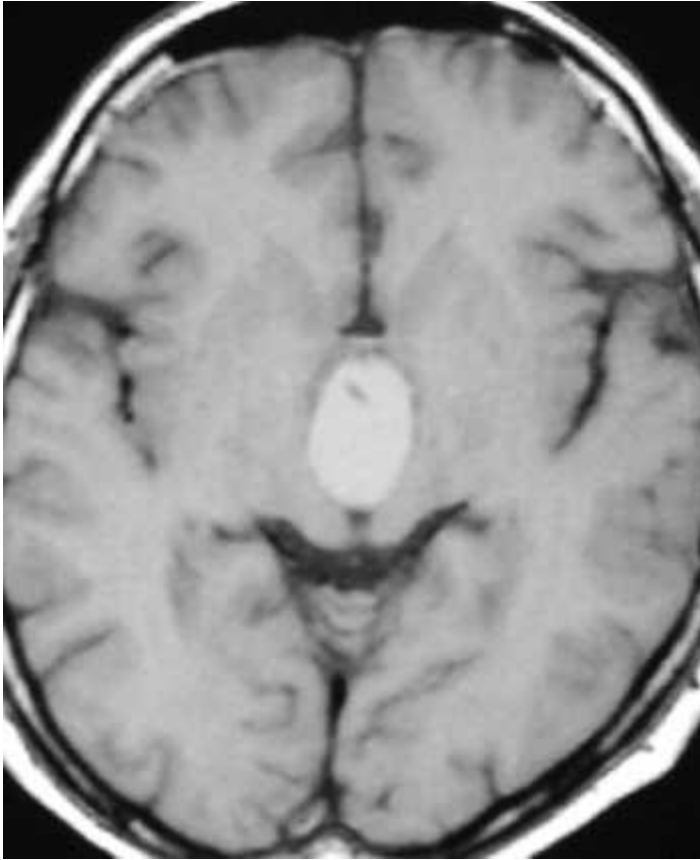
**Final Diagnosis:** Colloid cyst of the third ventricle

**References:**

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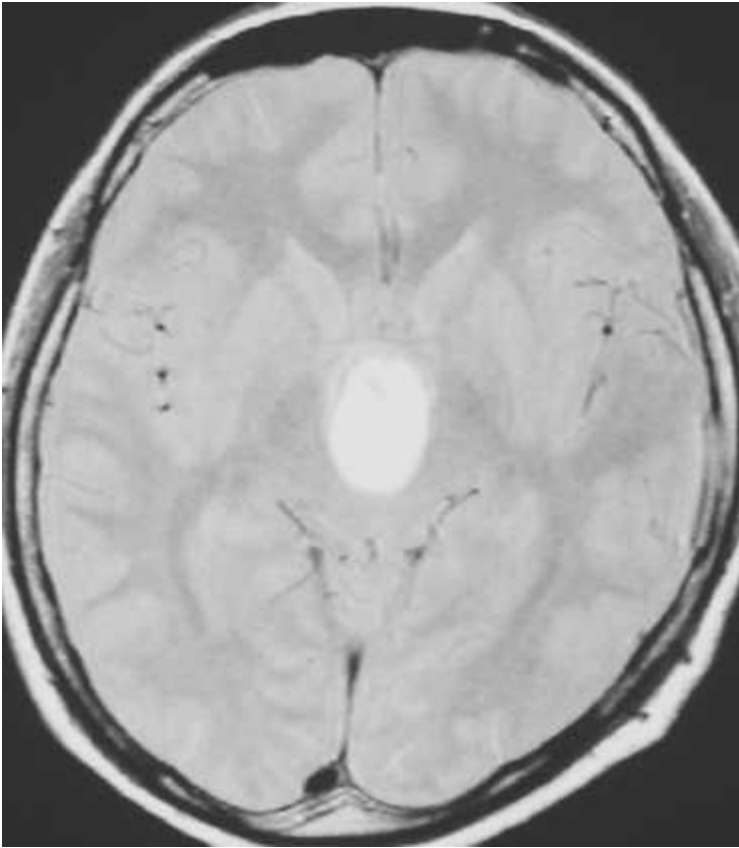
**Figure 1**

**a**



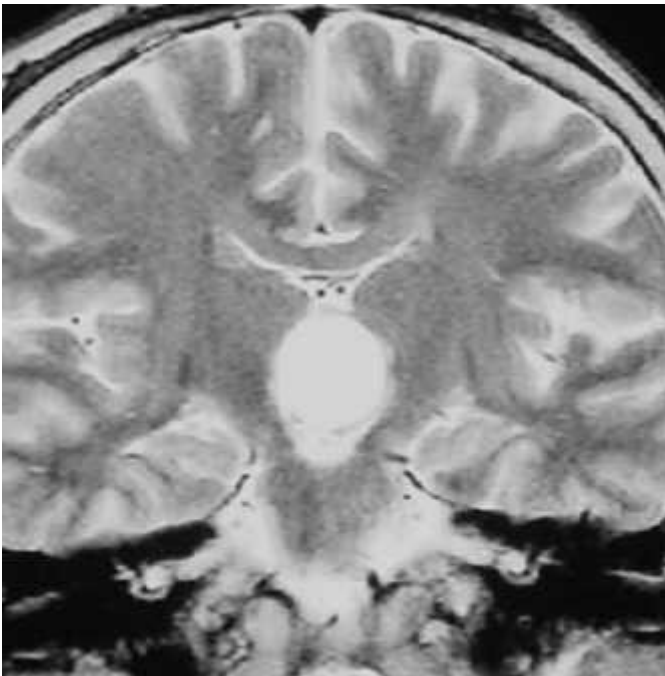
**Description:** Axial SE T1-weighted MR image shows a hyperintense well-delineated cystic mass within the third ventricle. **Origin:**

**b**



**Description:** Axial FSE PD-weighted MR image shows a hyperintense (compared to cerebrospinal fluid) well-delineated cystic mass within the third ventricle. **Origin:**

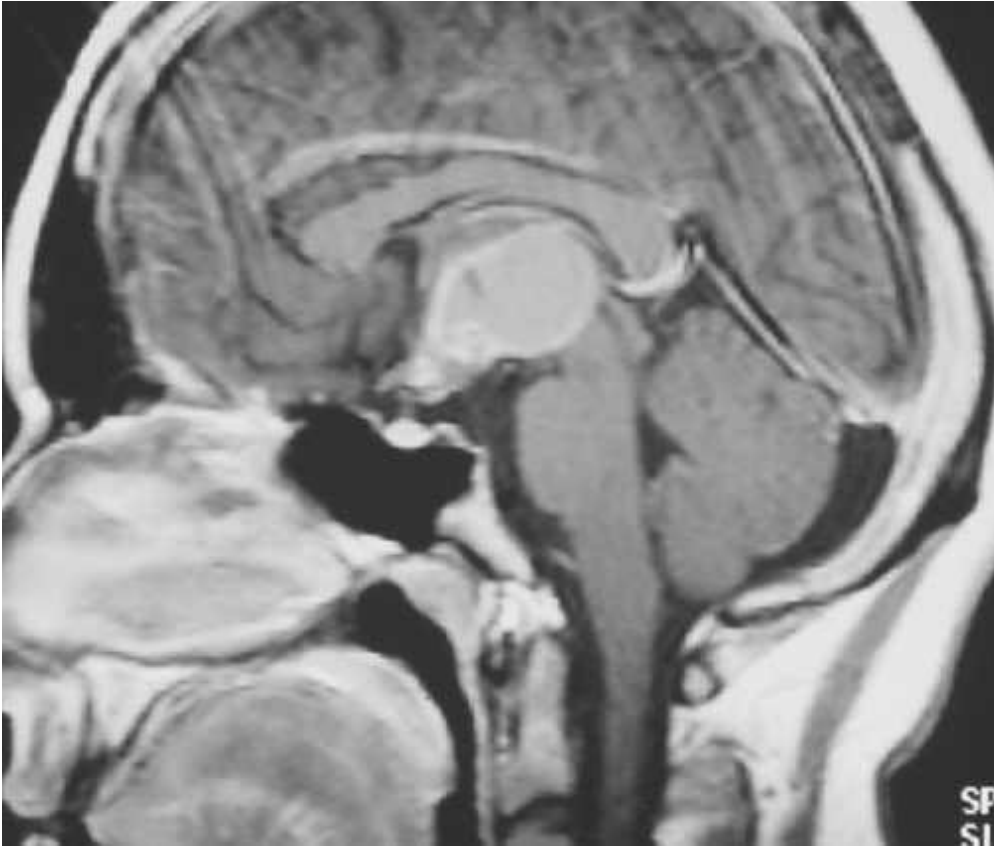
**c**



**Description:** Coronal FSE T2-weighted MR image shows a hyperintense well-delineated cystic mass within the third ventricle. **Origin:**

**Figure 2**

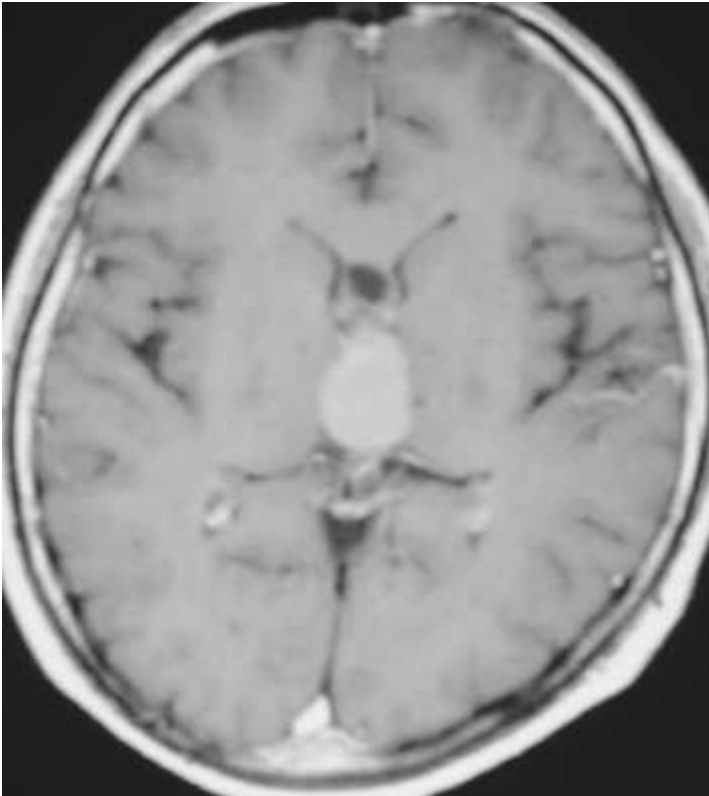
**a**



**Description:** Sagittal post-gadolinium SE T1-weighted MR image shows a hyperintense well-delineated cystic mass within the third ventricle, with a peripheral capsular contrast enhancement.

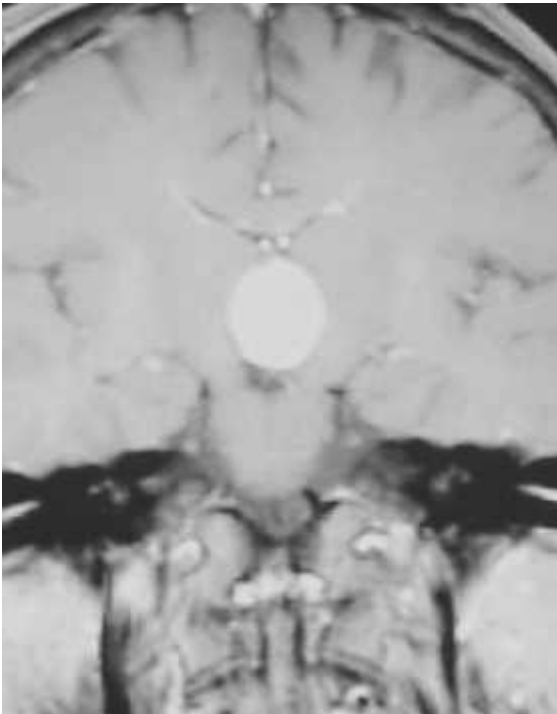
**Origin:**

**b**



**Description:** Axial post-gadolinium SE T1-weighted MR image shows a hyperintense well-delineated cystic mass within the third ventricle, with a peripheral capsular contrast enhancement. **Origin:**

**c**



**Description:** Coronal post-gadolinium SE T1-weighted MR image shows a hyperintense well-delineated cystic mass within the third ventricle, with a peripheral capsular contrast enhancement.

**Origin:**