

Case Report

Colloid cyst: unusual location of petrous temporal bone

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Received: 03 February 2020

Accepted: 17 March 2020

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ABSTRACT

Colloid cysts are benign, thin walled spherical neoplasms, composed of a collagenous capsule, underlying epithelium that arises from brain's epidermal embryonic remnants and a viscous centre. They are shown to approximate 0.5% of all intracranial tumours with no recorded evidence of the petrous temporal bone involvement. Colloid cyst of the petrous temporal bone often presents with clinical symptoms of headache, hearing loss, facial palsy and imbalance/vertigo. Which is diagnosed on radiological and histological findings. Histologically, they are lined by ciliated cuboidal to pseudo stratified columnar epithelium resting on an eosinophilic basement membrane. Imaging Techniques are helpful in early diagnosis and preventing further complications. Here we will be discussing about a 24-year-old female, a known case of petrous apex osseous haemangioma presenting with unstable gait and tingling sensation on one side of face leading to an incidental finding of a colloid cyst on petrous temporal bone through histological examination.

Keywords: Colloid cyst, Osseous haemangioma, Petrous temporal bone, Retro-mastoid craniotomy

INTRODUCTION

Colloid cysts are benign, thin walled spherical neoplasms, composed of a collagenous capsule, underlying epithelium that arises from brain's epidermal embryonic remnants and a viscous centre.¹ They are shown to approximate 0.5% of all intracranial tumours with no recorded evidence of the petrous temporal bone involvement.² Colloid cysts are benign slow growing neuroepithelial cysts.³ They represent about 0.5% of all intracranial neoplasms and about 15-20% of all intraventricular neoplasms.⁴ Colloid cyst presenting outside 3rd ventricle have seldom been reported.⁵ Patients mostly become symptomatic after 3rd decade of life but may be diagnosed at any age. Male preponderance has been observed.^{6,7} Though they follow a benign course they are often associated with significant morbidity as they may present with acute hydrocephalus and sudden death in a previously asymptomatic individual.⁸ Diagnosis is usually based on clinical suspicion followed by radiological methods such as CT and MRI.

CASE REPORT

A 24-year-old female, an operated case of left parietal osseous haemangioma presented with chief complaints of reduced hearing on left side, deviation of angle of mouth to right, difficulty in walking since 1 month. Tingling sensation on right side of jaw and chin region, no complaints of pain in cheek region. Patient was conscious, oriented to time, place and person, higher mental functions were normal. She had a broad based gait. Grade 5 power in all 4 limbs. On examination she had Left LMN facial palsy; House-Brackman grade 2, SNHL on left side and depressed gag reflex. No signs of spinal accessory nerve palsy.

Radiological investigations

Left petrous mass measuring 5.5 × 5.2 cm in size. It shows heterogenous signal intensity. Hypodense and hyperdense on T1 and T2 weighted images respectively. Scan shows lytic lesion in left petrous part of temporal

bone. Mass is involving the petrous and mastoid and causes scalloping of bone. Wall of the carotid and jugular fossa shows erosion. Marked compression of the brainstem and 4th ventricles seen with hydrocephalus. Minimal tonsillar herniation was noted.

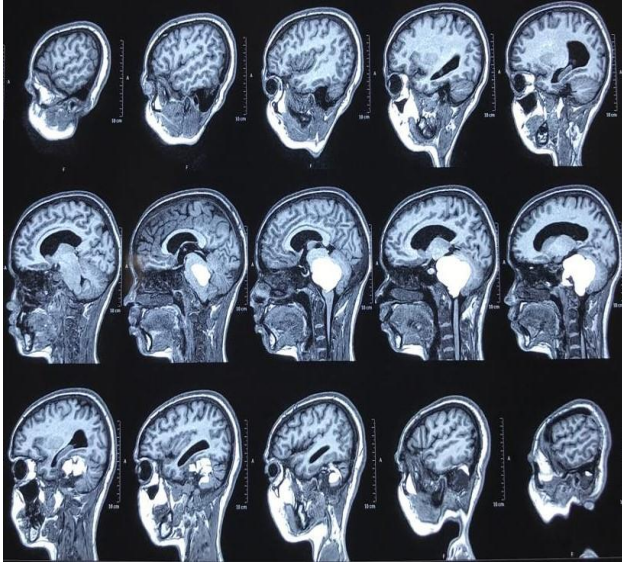


Figure 1: Lytic lesion in the petrous part of temporal bone.

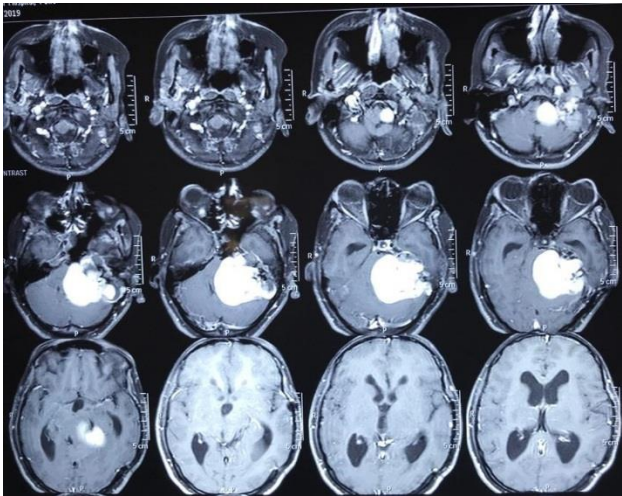


Figure 2: Mass is involving the petrous and mastoid and causes scalloping of bone.

Intra-operative findings

Left retromastoid craniotomy was done under general anesthesia.

Incision: A left curvilinear retromastoid incision was taken.

Finding: Cystic collection of size 4×3×2 cm. The cyst was adherent to the duramater and sigmoid sinus.

Dissection of cyst wall was done under microscope. Erosion of left petrous and mastoid bone was seen.

Post-operative investigations

MRI brain (plain and contrast)

Residual mass in the left petrous and mastoid bone involving the inner and middle ear cavity. Its approximate size was 28.4×50.5×40.0 mm (trans ×AP×CC). Its bulk was decreased. Post-operative changes were seen in the left cerebello-pontine angle cistern. Minimal extension at the base of the skull was static. Reactive enhancement is seen in the posterior fossa and left temporal fossa. Mass effect on the brainstem and 4th ventricle was decreased with reduction in the hydrocephalus. Now there was mild hydrocephalus with mild bleed in the occipital horns of bilateral lateral ventricles.

Sub arachnoid pneumocephalus was noted.

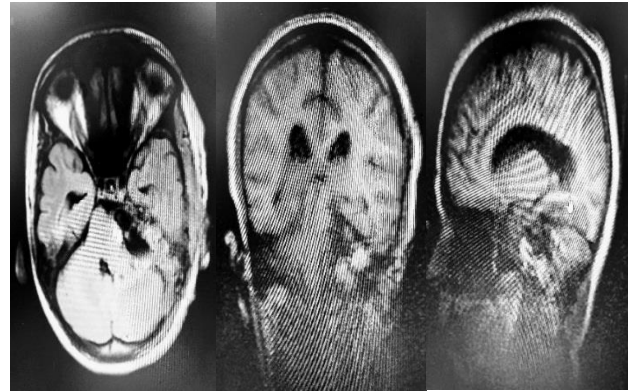


Figure 3: Post-operative image finding.

Histopathology report

Excised petrous bone lesion was sent for histopathological examination which revealed benign epithelial cyst. The morphological features of this cyst were reminiscent of colloid cyst.

DISCUSSION

Colloid cyst are benign, thin walled spherical neoplasms, composed of a collagenous capsule, underlying epithelium that arises from brain's epidermal embryonic remnants and a viscous center.¹ They have a variable clinical presentation. Patient may remain asymptomatic, or becomes symptomatic due to CSF outflow obstruction and presents with symptoms such as headache, nausea, vomiting, disorders of consciousness and fainting attacks.⁹ They may follow a benign course and spontaneously resolve, or may present with life-threatening complications of acute hydrocephalus, rapid neurological deterioration and sudden death.⁸ Clinical suspicion followed by radiological imaging often leads to

diagnosis. Mucin secreted by the inner wall of cyst determines the imaging properties.⁹ CT without contrast is the first preferred investigation; showing hyper density in nearly 2/3rd of colloid cysts.¹⁰ But cyst may appear iso or hypodense in comparison to brain depending upon the amount of fluid, protein and cholesterol present in the cyst.⁹ The cyst appears well demarcated and is round or oval in shape. MRI imaging of most colloid cysts show hyperintensity on T1 and T2 weighted images although hypo intensity on T1 and hyperintensity on T2 has also been described.⁹ Depending upon the severity of symptoms various surgical modalities may be used. Microsurgical resection by doing a craniotomy may be performed if neuro endoscopic removal is not feasible. Standard treatment of symptomatic ventricular colloid is by transcalsal or transcortical approach. Postoperative epilepsy is an additional risk associated with transcortical approach.¹⁰ Cognitive dysfunction is a risk more frequently seen in microsurgical approach, whereas neuro-endoscopic removal there is less risk of cognitive dysfunction.⁴

CONCLUSION

Extra ventricular colloid cyst are rarely encountered in practice, petrous apex colloid cyst hasn't been reported in the literature due to extreme rarity of often being missed or misdiagnosed considering the location. Hence, it should be considered a differential diagnosis in petrous apical lesions as presented in this case report. Early diagnosis and appropriate surgical intervention make belief of reducing complications and morbidity associated with the condition. Complete excision of lesion using microsurgical techniques can result in complete recovery.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Chatterjee S, Rokade V, Mali SR. Colloid cyst: unusual location of petrous temporal bone. *Int Surg J* 2020;7:1672-4.