

Spontaneous Lateral Intra Sphenoidal Meningoencephalocele- A Case Report

Dr. G. Srujana¹, Dr. Raj Kumar Patil²

¹MDRD, Department of Radiodiagnosis, Narayana Medical College, Nellore, Andhra Pradesh, India

²DMRD, Department of Radiodiagnosis, Narayana Medical College, Nellore, Andhra Pradesh, India

Abstract: Spontaneous lateral sphenoidal meningoencephalocele is a rare entity. It can be either spontaneous or acquired. We are reporting a case of spontaneous meningoencephalocele in a 53-year-old female with a history of CSF rhinorrhea for which radiological evaluation was done with high-resolution CT and MRI. CT showed a defect in the lateral wall of sphenoid sinus and MRI revealed herniation of brain parenchyma through the defect along with CSF. Surgical correction and short term follow up was done

Keywords: Meningoencephalocele, CSF leak, FIESTA, Endoscopic repair

1. Case Report

We are presenting a case of a 53-year-old female who presented with a history of intermittent watery discharge from the left nose worsened on clinostatic position. No history of meningitis or trauma. β 2-Transferrin-analysis and albumin/prealbumin tests of the nasal discharge indicated cerebrospinal fluid. MRI revealed herniation of inferior temporal gyrus along with meninges through a bony defect on correlative CT images (Figs 1a - c).

An endoscopic trans sphenoidal reduction of the meningoencephalocele and obliteration of the left sphenoid sinus was performed.

At surgery, a 1.5x1 cm dehiscent area in the lateral wall of left sphenoid sinus was present. (figs 2 d) The sinus was cleared of all mucosa and obliterated with fat, fibrin glue, fascia lata, surgical and gel foam. Six weeks postoperatively, the patient as well, with no further CSF leak.

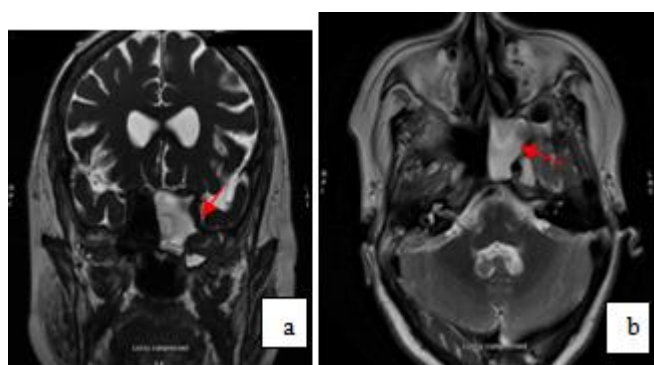


Figure 1 (a, b): Coronal FIESTA, b. Axial T2 sequence showing herniation of CSF filled meninges and left inferior temporal gyrus into the left sphenoid sinus through a bony defect



(C) CT coronal section showing defect in the lateral wall of sphenoid sinus on left side

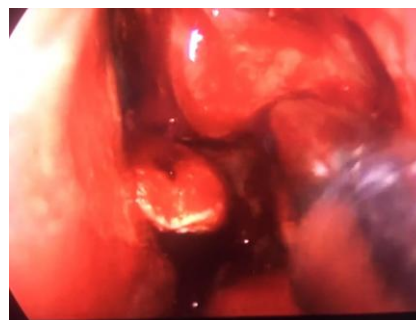


Figure 2 (d): Endoscopic image of left sphenoidal encephalocele with CSF fistula in endoscopic assisted trans sphenoidal approach

2. Discussion

Spontaneous CSF leak is an infrequent entity [1]. Anterior cranial fossa, especially the ethmoid roof and cribriform plate, are the most common sites. Less common sites include the over pneumatized sphenoid sinus especially its lateral wall, around the sella or at the inferolateral or pterygoid recesses [2].

Congenital meningoceles arise from sternberg canal or CSF fistulas in patients with normal pneumatization of sphenoid sinus [2].

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To confirm the diagnosis, localise the defect site and exclude an associated meningoencephalocele at the site of defect imaging in CSF fistulae is done [2]

Accurate preoperative localisation of the site of the fistula is very useful for successful treatment as most defects are now repaired using endoscopic surgery. Significant defects require an open approach via a craniotomy. Complete obliteration of the sphenoid sinus would rarely be successful in large/significant defects, and a vascularized flap is often needed in these instances. CT is best for bony anatomical detail and is useful in preoperative planning. For detection of an osseous dural defect, high-resolution CT has low sensitivity. Accuracy may be increased by using CT cisternography [3]. Magnetic resonance imaging (MRI) provides additional information for accurate detection of in active fistula, encephalocele [5].

(Fast Imaging Employing Steady-state Acquisition Cycled Phases)FIESTA-C sequence, which is a high-resolution heavily weighted T2 sequence is beneficial [4]. The transcranial approach has a success rate of up to 80% which was performed traditionally, but because of additional morbidity related to the craniotomy as well as the risk of anosmia owing to damage to the olfactory tracts for small defects, Transnasal endoscopic surgical techniques are now increasingly performed. The reported success rates to trans nasal endoscopic surgical approach 90%, which is superior to open repair.[6]

3. Conclusion

Spontaneous/ primary CSF fistula is a rare cause of CSF rhinorrhoea. CT, CT cisternography, MRI are the various imaging modalities for preoperative evaluation. If a transnasal endoscopic approach is planned MRI with high-resolution and highly T2-weighted images (FIESTA) are most valuable for preoperative assessment.

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Author Profile



Dr. G. Srujana Completed MBBS and pursuing postgraduate in Narayana medical college. Presented few papers and posters in national and state conferences of radiology