



IDIOPATHIC INTRACRANIAL HYPERTENSION PRESENTING WITH SPONTANEOUS CSF RHINORRHEA AND SPINAL MENINGOCELES

Radio-Diagnosis

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ABSTRACT

Occurrence of spontaneous CSF rhinorrhea is rare but described. Idiopathic intracranial hypertension is a common and important etiology. The case presented here is one among them where there was no history of trauma or surgery. MR Cisternography was done which showed findings suspicious for CSF leak. This patient also had cervical radiculopathy which could be attributed to the multi-level meningoceles seen on the MR spine.

KEYWORDS

INTRODUCTION

Idiopathic intracranial hypertension is described as persistent raised intracranial pressure with no demonstrable cause on neuroimaging. Definite diagnosis is via a lumbar puncture and direct measurement of intracranial pressure. Most patients with this entity present with headaches. Signs of idiopathic intracranial hypertension on MRI include prominent optic nerve sheaths, stenosis of transverse sinuses, empty sella, and prominent or dilated subarachnoid spaces (1).

Clinical Presentation

A 68-year-old female patient presented with radiculopathy and an acute history of continuous left-sided clear nasal discharge.

Imaging Findings

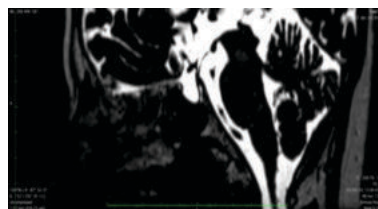
T2 3D CISS and SPACE sequences were done. They showed a hyperintense tract extending from the floor of the anterior cranial fossa into the left posterior paranasal sinuses. Scattered T2 hyperintensity was also seen in the left sphenoid ethmoid recess, in anterior ethmoidal cells below cribriform plates. MRI Brain also showed empty sella filled with CSF. Dilated peri optic nerve sheaths were seen. Prominent Meckel caves were noted bilaterally. Non-contrast MR Venogram showed stenosis of bilateral transverse sinuses. In addition, T2 images also showed multiple sites of prominent arachnoid imprints at the skull base. MRI cervical Spine showed meningoceles at multiple levels.

Treatment

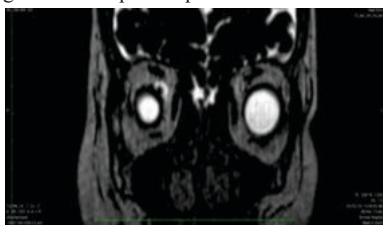
The patient was taken up for endoscopic surgery, active leak was visualized on the left side from a defect at the cribriform plate with a small meningocele. Dural patch repair was done.



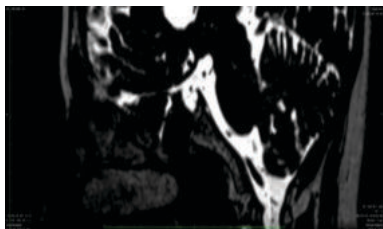
3D T2 Space Axial Image Shows Hyperintensity In Left Sphenoid Ethmoid Recess.



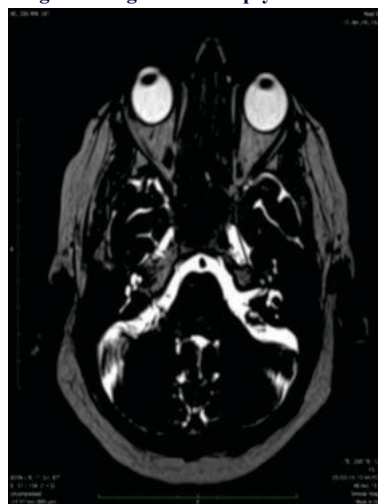
3D T2 Space Sagittal Image Shows Empty Sella



3D T2 Space Coronal Sequence Shows CSF Leak Bilaterally Into Anterior Ethmoidal Air Cells



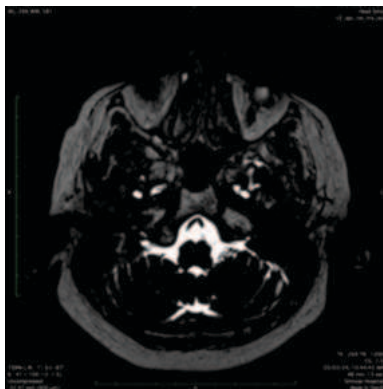
3D T2 Space Sagittal Image Shows Linear Hyperintense Track Extending From Anterior Cranial Fossa Into Para Nasal Sinuses.



3D T2 Space Axial Image Shows Prominent Meckel Caves



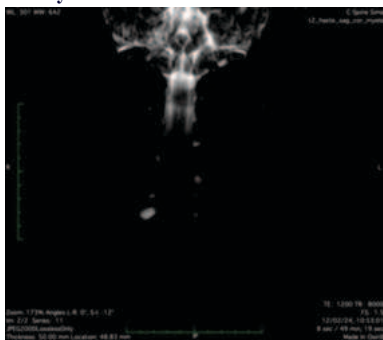
3D T2 Space Axial Image Shows Dilated Peri Optic Nerve Sheaths And Flattening Of Posterior Sclera



3D T2 Space Axial Image Shows Prominent Arachnoid Prints At Skull Base .



Non Contrast Mr Venogram (MIP)shows Stenosis Of Transverse Sinuses Bilaterally .



Mr Myelography Shows Meningoceles At Multiple Levels .

DISCUSSION

CSF Rhinorrhea is a symptom of cerebrospinal fluid leakage into the paranasal sinuses, then into the nasal cavity with the patient presenting with clear nasal discharge, exacerbating on bending forward. Congenital causes include meningocele, encephalocele, and persistent lateral cricopharyngeal canal. In most acquired cases, it is a result of

trauma or surgery causing osseous, dural defects in the skull base leading to communication between the intracranial compartment and nasal cavity via paranasal sinuses. The most common sites of spontaneous CSF leak are the cribriform plate, ethmoid roof, sphenoid sinus, peri sellar region, and pterygoid recess.

Pathophysiology has been described to be persistently raised intracranial pressure causing skull base erosions at weak spots leading to meningo encephalocoeles. These erosions are visualized in the form of arachnoid imprints in the skull based on MRI. CSF leak acts as a safety valve against elevated intracranial tension (2).

REFERENCES

1. Arhem F. Barkatullah .MRI findings as markers of idiopathic intracranial hypertension. Curr Opin Neurol. 2021Feb 1;34(1):75-83
2. D.-T.Ngyuen. The relationship between spontaneous cerebrospinal fluid leak and idiopathic intracranial hypertension.European Annals of Otorhinolaryngology, Head and Neck Diseases.May2021.138(3)177-182