

## Spontaneous CSF Rhinorrhea: A case report

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### Abstract

We report a case of CSF Rhinorrhea in a 68 years old female patient, with a known case of hypertension and dyslipidemia. With the use of CT cysternography, we detect that CSF leaks earlier and prevent a major complications by the treatment.

### Key-words

CSF leaks, CT cysternography, Rhinorrhea, Treatment.

### Case Presentation

Mrs Shahithu nisha 68 years old female, a k/c/o hypertension, dyslipidemia on treatment presented with a 1 month history of headache on and off with watery discharge from B/L nose and had an episode of vomiting previous day.

### Past Medical History

History of irrelevant speech on the day of admission. History of homeopathic treatment taken for headache. She was taken to a local hospital, MRI brain showed calcified granuloma in right cerebellum suspicious bony defect in the right cribriform plate.

Lumbar puncture report,  
Protein - 140  
Glucose - 39.2  
WBC - 30 cells

### Past Medication History

Patient was treated with Inj Meropenam, Inj Vancomycin.

### On Examination

On arrival to ER her GCS was E4V4M5. Vitals were stable. Temperature was normal. Sugar - 214mg/dl.

### Management

Patient shifted to neuro ICU for observation.

She continued to be restless and confused for which Neurosurgeon advised for CT-cisternogram

Results showed defect involving the cribriform plate on both sides (right>left) near midline in posterior aspect with seepage of contrast across it

After cisternogram patient had no further rhinorrhea

Patient treated with antibiotics, anti-epileptics, anti-hypertensive and other measures.

### The Preliminary Investigations

Total count - 15900  
Neutrophil - 81.9%  
CRP - 124  
Procal - 5.37  
HbA1c - 7.1.  
LFT, RFT and chest X-ray normal.

### Lumbar Puncture Report

During lumbar puncture normal pressure CSF was obtained and,

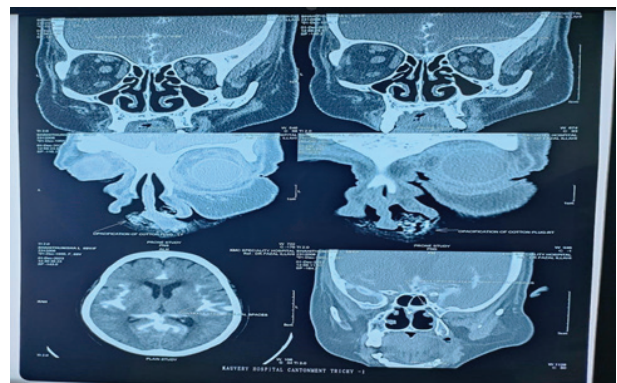
Protein - 132  
Sugar - 65  
GRBS - 248

CSF Cell count:

WBC - 458  
Polymorphs - 57%  
Lymphocyte - 43%  
RBC - 700

CSF culture: No growth,

Probably partially treated bacterial meningitis



CT-cisternogram

## Medications

Patient treated with empirical antibiotics (Inj Xone and Inj Vancomycin).

Patient was advised to take same antibiotics for total 14 days along with Acetazolamide for 2 weeks.

Discussion

Spontaneous CSF rhinorrhea is a rare disease which is usually related to congenital temporal bone, skull base and dural malformations and defects and traumatic CSF leak is common.

The combination of pre-existing weakening of meninges and sudden violence can cause CSF rhinorrhea.

A weakened dural structure can easily lead to formation of diverticula or expansions and increases the possibility of dural tear formation resulting in CSF leak in epidural space.

CT can accurately detect the bone defect site of CSF leakage and measure CT value can be used to determine the nature of sinus effusion.

CT-cisternography was more specific than that of CT showing leakage morphology size location and quantity of CSF rhinorrhea leakage •

In case where all aforementioned studies fails radionuclide cisternography with detection of isotope uptake by intranasal pledgets may be the last resort to lateralise the fistula.

For patients who are not cured after conservative treatment for 3-4 weeks, surgical repair should be conducted.

CSF leakage often repaired with autologous transplantation material such as cartilage, bone, nasal septum mucosa, turbinate, fascia, abdominal fat and ear cartilage

## Complications

Chronic and untreated CSF leak can cause low pressure headache, neck pain, tinnitus and loss of smell or taste, Life threatening CNS infections including,

Meningitis

Pneumocephalus

Intracranial hematomas

Brain abscess

Central herniation

Nerve root irritation.

## Conclusion

CT or MR cisternography is the gold standard for detection of CSF leaks as it can identify the size, location and quantity of leak

Treatment usually involves conservative (use of Acetazolamide with elevation of head) approach which if failed is followed by surgical approach (endoscopic/extra cranial approach) or intracranial approach.

Early diagnosis and prompt treatment of CSF rhinorrhea are important to prevent complications such as meningitis, intracranial sepsis and abscesses which are associated with high mortality.