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Dangerously leaking nose

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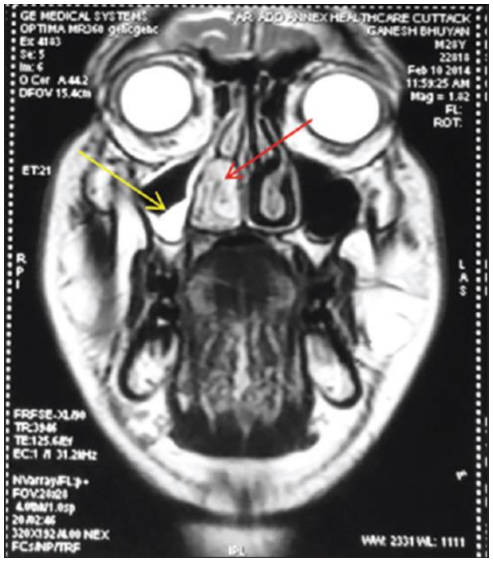
ABSTRACT

Cerebrospinal fluid (CSF) rhinorrhea is a symptom caused by the leakage of CSF into the nasal septum, resulting from a defect in the skull base. Bacterial meningitis following CSF rhinorrhea is seen even in immunocompetent individuals. Meningeal infection with Mycobacterium tuberculosis is an example of a form of meningitis where difficulties in diagnosis and management regularly occur. However tubercular meningitis (TBM) is very rare and there is still no diagnostic method, which is both sufficiently rapid and sensitive.

Keywords— *Cerebrospinal fluid rhinorrhea, Tubercular meningitis, CT paranasal sinuses, Bone erosion, Anti tuberculous drugs*

1. INTRODUCTION

Meningitis remains a disease with high mortality and morbidity even in this antibiotic era.it is mainly due to difficulties in diagnosing the specific subsets of meningitis for best possible management.



2. DISCUSSION

Bacterial meningitis following CSF rhinorrhea is seen even in immunocompetent individuals.incidence of meningitis post-traumatic CSF rhinorrhea is around 0.3-2%. However, TBM is very rare and incidence is not known. During the last three decades, extrapulmonary tuberculosis (EPTB)has gained special attention because of HIV pandemic. Mycobacterium tuberculosis most frequently reaches the lungs and rarely involves PNS.

Three types of sinonasal tuberculosis:

- Mucosal involvement
- Bony Involvement and fistula involvement
- Hyperplastic changes with the formation of tuberculoma.

Meningeal infection with M.Tuberculosis is an example of a form of meningitis where difficulties in diagnosis and management regularly occur. The fact remains that there is still no diagnostic method, which is both sufficiently rapid and sensitive.

The initial clinical and laboratory picture of TBM is respectively non-specific, resembling many other causes of subacute meningitis.

Typically, headache, fever and meningitis progress to coma within a few days, the CSF being lymphocytic with a low glucose concentration, though many atypical presentations have been described. Many methods of laboratory confirmation of TBM is available, but each one has its own drawback. The gold standard investigation is the detection of tubercle bacilli in the CSF by microscopy and/or culture. Direct microscopic examination of the CSF, however, is sensitive to sample volume and time spent searching for acid-alcohol fast bacilli in multiple fields.

Other investigations used in patients with suspected TBM include the tuberculin skin test, but this is subject to both false positive and false negative results. The chest x-ray may show a military appearance in a small proportion of cases. Brain imaging by CT or magnetic resonance may reveal hydrocephalus or basal meningeal enhancement in TBM but the appearances are non-specific, being shared by other subacute and chronic meningitides. A significant proportion of patients with TBM will have normal imaging. Tuberculomas are seen only in a minority.

One approach is to measure a surrogate marker such as CSF –ADA.ADA. The apolymorphic enzyme involved in purine metabolism is found to be elevated in the CSF of TBM patients and gradually returns to normal values after 2-6 weeks of specific treatment. The estimation is easy, fast, inexpensive and can be done in normal laboratories.

In a study, CSF-ADA level 6.5 IU/L as a cut off value exhibited a sensitivity of 95.83%, specifity of 92.85%, the positive predictive value of the test is 95.83% with overall accuracy being 94.73%.

The detection of M.Tuberculosis nucleic acid in CSF by the polymerase chain reaction and allied techniques is more promising. But the sensitivity of PCR is probably no different from that of a carefully analyzed smear and it requires larger sample volume.

The advantage of PCR is in patients where CSF was taken after anti-tuberculous treatment had begun, as mycobacterial nuclei acid is likely still to be detectable, but the sensitivity of smear and culture will have fallen drastically. However, availability and cost are major constraints.

3. CONCLUSION

Meningitis with rhinorrhea can present with minimal signs of meningitis due to decreased CSF pressure.CSF rhinorrhea is an important cause of recurrent meningitis, whether due to spontaneous leak or secondary to trauma or infections and it is an understated cause of chronic orthostatic headache. Diagnosis of TBM has become easier with the availability of newer markers like ADA, which is relatively cheap, rapid, easily available and has high sensitivity and specificity.

4. REFERENCES

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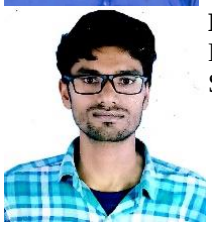

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