

Recurrent Meningitis – A Case Report

Iram Iqbal, Saifullah Sheikh, Asim Shoukat, Muhammad Asghar Butt

ABSTRACT

Recurrent meningitis is an uncommon but serious condition. A 13 year old girl presented with recurrent meningitis, was admitted and investigated for the cause of meningitis.

She had frontal bone fracture due to trauma 5 years back.

We present a pediatric patient with recurrent meningitis without CSF rhinorrhea or otorrhea.

INTRODUCTION

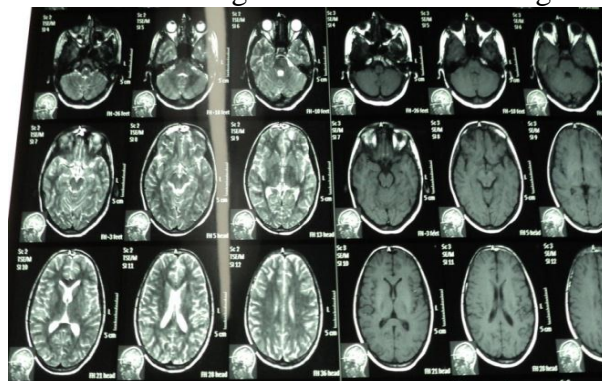
Acute bacterial meningitis is a potentially life threatening infection of cranial and spinal leptomeninges that can lead to significant mortality and morbidity. A single episode of meningitis is usually the result of hematogenous dissemination of organisms. In recurrent meningitis other possible routes of bacterial invasion of CSF should be considered. A paediatrician should evaluate the patient carefully in search of a possible anatomic defect or immunodeficiency. Developmental or traumatic defects may be responsible for access of bacteria into the subarachnoid space. We present a pediatric patient with recurrent meningitis without CSF rhinorrhea or otorrhea.

Signs of meningeal irritation were present. Fundoscopy was normal. Rest of the systemic examination was normal.

CSF examination showed:

- Proteins 277 mg/dl
- Glucose 14 mg/dl
- WBCs 600/cmm
- Polys 80 %,Lymphos20%
- Gram positive cocci were seen

MRI brain showed gliosis in Left frontal region.



(Fig. 1)

HRCT of base of skull showed bony defect in left frontal bone along the superior surface of left frontal sinus.



(Fig. 2)

Corresponding Author:

Dr. Iram Iqbal
PGR of Paediatric Medicine,
Allied Hospital, Faisalabad
Contact: +92 321-7845573
Email: iramiqbalkemu@gmail.com

CASE REPORT:

A 13 year old female, developmentally normal, vaccinated, born to non consanguineous parents presented to us with complaints of fever, headache and neck stiffness for 1 day. There was no history of fits, altered sensorium, ear or nasal discharge. Her past history was significant for fall from height at 8 years of age and since then she had 6 episodes of pyogenic meningitis. Examination revealed a 13 year old female with extended neck with pulse rate 126/min, respiratory rate 30/min, blood pressure 110/70 mmHg. Her GCS was 15/15.

Patient was treated with Inj. Benzyl Penicillin 4 lac units/kg/day divided q 6 hr IV.

Inj. Dexamethasone 0.6 mg/kg/day divided q 6 hr IV.

We gave the patient meningococcal vaccine (mencevax) which was repeated after 8 wks.

Pneumococcal polysaccharide vaccine (pneumo 23) was also given.

Patient was started on Inj. benzathinepenicillin prophylaxis 1.2 million IU intramuscular monthly and referred to Lahore General Hospital for surgical correction of the defect.

DISCUSSION

Recurrent meningitis is defined as two or more episodes of meningitis caused by a different organism or a second or further episodes caused by the same organism with a greater than three weeks interval after completion of therapy.¹

The most common cause of recurrent meningitis is anatomical defects (59%) out of which the largest group includes traumatic head injury with secondary CSF fistula. Others include spinal dysraphism, neurosurgical procedures like VP shunting, spinal surgery, cochlear implants or maxillofacial surgery. These conditions cause communication of subarachnoid space with paranasal sinuses, nasopharynx, middle ear or skin.²In fracture of paranasal sinuses, cribriform plate or petrous bone, meningitis is due to the direct contact with bacteria in these cavities, most commonly streptococcus pneumonia.³ Immunodeficiency accounts for 36% of the cases, out of which complement deficiency is most common. Others include agammaglobulinemia, IgG deficiency, common variable immunodeficiency and asplenia.

Parameningeal infections (5%) like otitis media, mastoiditis or chronic sinusitis also cause recurrent meningitis.

Anatomic communication between subarachnoid space and skin or non-sterile body cavities leads to recurrent meningitis. In such cases CSF rhinorrhea or otorrhea is a common symptom.⁴

Treatment options of dura repair include fascia lata graft, pericranial graft, synthetic dura or fibrin glue.

Treatment for bone defect includes rib or iliac crest graft or methyl methacrylate, with either endonasal or transcranial approach.^{5,6}

CONCLUSION:

The skull base fracture should always be evaluated radiologically to find out bony defects in case of recurrent meningitis even in the absence of CSF rhinorrhea.

REFERENCES:

1. Chen XL, Jiang L. Recurrent bacterial meningitis caused by an occult basilar skull fracture. *World J Pediatr.* May 2011;7(2):179-81.
2. Kerman M, Cirak B, Dagtekin A. Management of skull base fractures. *Neurosurg Q.*2002;12:23-41.
3. Tuygun N, Tanir G, Aytekin C, Ulus S. Recurrent bacterial meningitis in children: our experience with 14 cases. *The Turkish journal of paediatrics Turkish J. of Ped* 2010; 52: 348-353.
4. Guinta G, Piazza I. Recurrent bacterial meningitis occurring five years after closed head injury and caused by an intranasal post traumatic meningoencephalocele. *Postgrad Med J*,1991;67:377-379.
5. Ouma JR. Recurrent meningitis due to unrecognised skull fracture. *South African Medical Journal.* Nov 2002;92(10):778-9.
6. James W, Herbert G. Recurrent meningitis due to congenital petrous fistula. *Otolaryng.* May 1967;85 (5):572-575.

AUTHORS

- **Dr. Iram Iqbal**
PGR of Paediatric Medicine
Allied Hospital, Faisalabad
- **Dr. Saifullah Sheikh**
Assistant Professor of Paediatric Medicine
PMC / Allied Hospital, Faisalabad
- **Dr. Asim Shoukat**
Associate Professor of Radiology,
PMC / Allied Hospital, Faisalabad
- **Prof. Dr. Muhammad Asghar Butt**
Professor of Paediatric Medicine,
PMC / Allied Hospital, Faisalabad

Submitted for Publication: 09-10-2014

Accepted for Publication: 14-12-2014