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A Case of Partially Treated Pyogenic Meningitis Developing 3rd Nerve Palsy as Complication

Vandana Yadav[1], Ashok Kumar Yadav[2]

[1]Senior Resident, Department of Ophthalmology, UPUMS, Saifai, Etawah, Uttar Pradesh, India
Corresponding Author Email: yadavvandana.93[at]gmail.com
Phone numbers: 7895456499

[2]Senior Resident, Department of Pediatrics, UPUMS, Saifai, Etawah, Uttar Pradesh, India
Email: priyanshyadav4509[at]gmail.com

Abstract: ***This study presents a comprehensive analysis of a pediatric case of pyogenic meningitis, emphasizing the importance of complete antibiotic treatment to prevent serious complications such as third nerve palsy. The case involves a 5 - month - old female previously diagnosed with pyogenic meningitis, who displayed symptoms like the inability to open the left eye, vomiting, and irritability. Despite initial improvement with intravenous antibiotics, the incomplete treatment course led to severe complications. The patient's condition was extensively investigated through various tests, including CBC, CRP, blood culture, CSF analysis, and ophthalmic examinations. The findings revealed severe ptosis in the left eye with third nerve palsy and grade 2 papilledema. While the patient showed symptomatic improvement with a renewed course of antibiotics and medications for raised intracranial tension, the third nerve palsy remained unresolved. This case underscores the critical need for a complete antibiotic regimen in treating pyogenic meningitis to prevent irreversible, life, and vision - threatening complications.***

Keywords: Pyogenic meningitis, Third nerve palsy, Pediatric neurology, Antibiotic treatment, Intracranial tension

1. Introduction

Pyogenic meningitis was defined as isolation of a pathogen in the CSF by either a positive bacterial culture or a positive lysophosphatidic acid (LPA) or a pathogen on gram stain (CSF) and a clinical improvement with antibiotics. [1]

Evaluation of CSF is an important lab parameter in diagnosis of meningitis, but CSF abnormalities produced by bacterial pathogens especially partially treated cases and fungal meningitis may at times difficult to differentiate from TBM. Early cases of TBM proteins are not greatly elevated and predominant cells are neutrophils. [1]

Extraocular motor cranial palsies are infrequent in pediatric population with an incidence of approximately 7.6/10000 [2]

The sixth cranial nerve is the primarily affected cranial nerve in idiopathic intracranial hypertension (IIH) due to its anatomical vulnerability. However, a few cases of oculomotor nerve palsy with IIH have been reported previously [3]

2. Material And Method

Case report of a patient who is admitted in department of pediatrics and came for ocular examination in outpatient department of ophthalmology is presented here:

Female child **age 5 months** presented with complaints of

1) **unable to open LE** eye for 10 - 12 day, 2) **vomiting** for 8 day, 3) **irritable**

Past history– at the age of 3 month patient is having fever, excessive irritability since 3 days and abnormal body movement since 1 day. Diagnosed as case of pyogenic meningitis in our institute and treated with iv antibiotics and improved with inj. ceftriaxone and inj. vancomycin and plan for 14 day but patient attendant take Discharge on patient request (DOPR) at day 7 and don't take medication out - side.

Immunization History– patient is immunized till date, BCG scar mark present.
No history of tubercular contact.

Investigations
Pt admitted to pediatric side and investigation done CBC, CRP, blood CS, electrolyte, CSF – cyto, bio, CS and CBNAAT and tubercular workup and montoux.

CBC – WBC 4.1 K, Hb 12.8g/dl, plat.5.6 lakh

Serum electrolyte Na 135 mmol/L, Ca 12.2 mg/dl, K 4.9 mmol/L

CSF sugar 46, protein 310.

Cyto<5

Culture sterile

ADA negetive

CSF, CBNAAT negative

Mountoux negative

Anterior fontanalle (AF) was bulging and tense on examination, vitals stable.

CT scan dilated ventricles

Ophthalmic investigations
Severe ptosis left eye (figure 1) with third nerve palsy (pupil involving = pupil are mid dilated non reacting [figure 2]) with left eye fundus findings suggestive of grade 2 papilledema [figure 3].
Rest WNL.

Treatment and Outcome
Injection **iv antibiotics,** ceftazidime and vancomycin given for 14 days.

Inj. Mannitol and acetazolamide tablet given for raised ICT.
Patient improved symptomatically and discharged but the 3rd nerve palsy not improved

3. Result and Conclusion

If pyogenic meningitis is not treated properly it can result in 3rd nerve palsy as a complication.

3.1 Conclusion

Complete course of antibiotic for pyogenic meningitis is to be done so that complications which can be life and vision threatening not develop.

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Figure 1: Severe ptosis left eye

Figure 2: Left eye down and out showing third nerve palsy

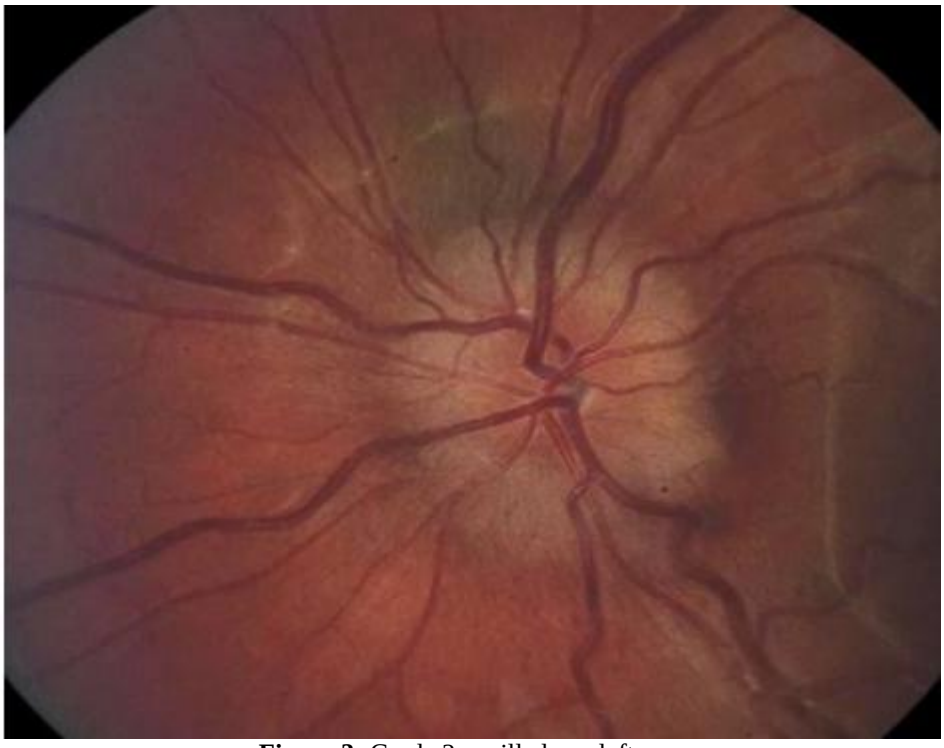

Figure 3: Grade 2 papilledema left eye