

**A CASE REPORT ON BACTERIAL MENINGITIS WITH COMPLETE
OPHTHALMOPLEGIA WITH BILATERAL VISUAL LOSS**Elza Mathew^{*1}, Aida Mary Joseph¹, Apollo James², S. Haja Sherief³ and T. Sivakumar⁴¹PharmD Interns, Department of Pharmacy Practice, Nandha College of Pharmacy, Erode, Tamilnadu.²Asst. Professor, Department of Pharmacy Practice, Nandha College of Pharmacy, Erode, Tamilnadu.³Head of Department, Department of Pharmacy Practice, Nandha College of Pharmacy, Erode, Tamilnadu.⁴Principal, Nandha College of Pharmacy, Erode, Tamilnadu.***Corresponding Author: Elza Mathew**

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ABSTRACT

More than 50% of the bacterial meningitis affected patients suffer from difficult severe complications such as hydrocephalus, brain edema, cerebrovascular complications and ventriculitis. Ophthalmoplegia is the rarest among them which is a condition of paralysis of muscles within or surrounding the eye. We report a case of a 66 year old lady with who was brought to emergency with complaints of fever, severe headache, neck pain and throat pain. On the basis of physical findings and CSF positive report she was diagnosed to have bacterial meningitis with complication of ophthalmoplegia. IV Antibiotics with IV Dexona was started. Antifungals were also given. On continuing the regular monitoring, she got back her eye movements.

KEYWORDS: CSF, CNS, OPTHALMOPLEGIA, NCCT.**INTRODUCTION**

Bacterial Meningitis is a medical emergency which requires immediate diagnosis and immediate treatment.^[1] It occurs within the subarachnoid space that is followed by a CNS inflammatory reaction that causes coma, seizure activity, increased intracranial pressure and ischemic infarcts. The main characteristic symptoms and signs of bacterial meningitis are headache, fever, nuchal rigidity, photophobia, vomiting and lethargy or an altered level of consciousness.^[2] The diagnostic test is the proof of bacteria in the CSF by gram staining or a positive bacterial culture. CT and MRI also provide information concerning intracranial complication such as brain edema, hydrocephalus and infarcts.^[3,4] There are many complications of bacterial meningitis such as hearing loss, recurrent seizures, arterial cerebrovascular problems, septic thrombosis, vision loss, cerebritis and brain abscesses etc. to improve the outcomes of acute bacterial meningitis, it is easy to decrease inflammation using Dexamethasone as an adjunctive treatment to antibiotics.^[3,5] Here we present a case report of bacterial meningitis with a very rare complication of Ophthalmoplegia (paralysis of the muscles within or surrounding the eye) and Visual Loss.

CASE REPORT

A 66 year old lady known case of hypertension and hyperthyroidism presented to emergency with chief complaints of fever, severe headache, neck pain and throat pain since 10 days and later developed slurring of

speech and left facial deviation since three days. Examination at admission revealed a conscious, alert but irritable patient who was complaining of severe headache. Patient was obeying commands, EOM was full, pupils were 3mm reactive to light bilaterally, left facial nerve weakness noted, fundus was not visualized as patient did not cooperate. Powers in all limbs were adequate. No neck rigidity was elicitable and palatal. Movements were also present bilaterally. Urgent NCCT head was performed, which revealed only bilateral sinusitis. Keeping in view of high chances of meningitis, empirical IV antibiotics (Vancomycin and Monocef) and IV Dexona was started on the same day of admission. Opinion was sought from the senior consultant ENT and his advice incorporated in the treatment. Opinion was sought with senior consultant internal medicine and his advice followed. CSF examination on the next day revealed P70S45C540 (N70% L30%). Gram stain, fungal stain and AFB stain were negative. Gene expert for TB was negative. Acute meningitis panel was negative. Cryptococcal antigen was negative. Aerobic C/S negative. Fungal C/S and AFB C/S reports no growth. Chest x-ray performed on the second day revealed an inhomogenous lesion in right upper zone. So HRCT chest was performed which revealed nothing significant. Second day night she developed sudden loss of vision and complete ophthalmoplegia, light reflex was also absent. Only light perception was present. Urgent CE MRI Brain was performed on third day which revealed periorbital and retro-orbital cellulitis with

evidence of meningitis along the temporal region with extension along the cavernous sinus walls and in peripontine cisterns. Urgent review was sought with senior consultant ENT who advises for CT PNS which was performed on the same day. CT PNS revealed left side posterior ethmoid sinus expansion causing compression of left optic nerves and right lateral wall sphenoid causing pressure of right optic nerve. So doctor advises urgent optic nerve decompression with extended FESS which was performed on the third day. HIV and HBsAg status were also negative. Opinion was also sought with senior consultant ophthalmology and her advice was followed. Patient was managed with IV antibiotics (Vancomycin, Fortum, Metronidazole, Septran DS, IV Ambisome, IV Dexona, IV Mannitol, IV Fluid, T Diamox, Inj Fentanyl infusion and other supportive measures in ICU but patient condition continued to deteriorate and patient suddenly desaturated on fifth day due to which patient was intubated urgently and was put on ventilator support which was weaned off by evening. But patient remained unconscious since then with GCS of E, V T M3. Patient was continued to be managed in ICU and opinion was sought from senior consultant respiratory medicine who advised some modifications in Antifungal and Antibiotics; which was followed. Tissue sample obtained during this also showed no growth. On the ninth day patient saturation dropped in morning and patient was again put on ventilatory support. Around 2pm on ninth day BP also fell due to which was given inotropic support. Patient was planned for MRI brain on same day which was deferred in view of hemodynamic instability and was later performed on the next day. Patient was managed with IV antibiotics (Vancomycin, meropenem) IV antifungal(Ambisome, posaconazole), IV Mannitol, IV Albumin, L-Thyroxine, IV fluids, Topical antibiotics, INJ MVI. Patient is under slow recovery. After six weeks of therapy, she regained full range of eye movements.

DISCUSSION

In about half of the adults, they suffer with complications during the first week. So admission to a good intensive care unit for neurology is the first recommended action to ensure close monitoring and rapid treatment.^[1] Our patient was confirmed with the diagnosis from physical findings and CSF positive with support. This disease can be suspected in any immunocompromised patients with fever, headache, and signs and symptoms referable to central nervous system. Our patient had signs of fever, headache, neck pain etc.^[6] During literature review we found several cases where ophthalmoplegia was commonly seen as a complication of cryptococcal meningitis but complete ophthalmoplegia with bilateral vision loss as a complication of bacterial meningitis is a purely rare presentation.

MRI brain showed diffuse soft thickening and areas of enhancement anterior to the orbital septum.^[7] Inflammation was found in the vital neurovascular

structures that may be affected by vascular neoplastic, infective and infiltrative lesions arising in the cavernous sinus proper or via extension from adjacent intra- and extra cranial region.^[8] All these are indications of ophthalmoplegia. Also CT brain showed a compression to the left and right optic nerves.

Bacterial meningitis is always an emergency situation. The basic first therapeutic measures are directed to sustain blood pressure and treat septic shock and choose an antibiotic which is known to be bactericidal for the established or suspected organism. Treatment should always begin while awaiting the results of diagnostic tests, and can be changed according to the findings. Here in the patient the organism was not identified. So the empirical therapy should be started before the pathogens are identified. For adults third generation cephalosporins+vancomycin can be given which is started in this patient.^[2] Dexamethasone is given in a dose of 0.15mg/kg given IV, every 6 hours it can reduce brain edema, intracranial hypertension and meningeal inflammation.^[3,9]

CONCLUSION

Bacterial meningitis is always a life threatening disease associated with high morbidity and mortality. What is required is rapid identification and treatment of patients at risk which is crucial and life saving. The immediate admission to neurological ICU should be strongly recommended to ensure continuous monitoring and prompt treatment.^[1,10]

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