

OCULAR MANIFESTATION OF MENINGITIS***Ronald N. E.**

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INTRODUCTION

Ocular manifestations in meningitis are thought to occur in over 70% of children and fundus involvement in around 5% of cases. These fundal complications include papilloedema, optic atrophy, temporal disc pallor and chorioretinitis in both tuberculous and cryptococcal meningitis, panuveitis and endophthalmitis in cryptococcal meningitis.

BACKGROUND/HISTORY

This was a case study of a 32 year old male patient who reported in the Clinic with a history of diplopia in his left eye. He claimed that he preferred using only his right eye as he was more comfortable that way. He also complained of headaches, pains in both eyes.

Photophobia and poor distant vision all of which started three weeks before then. His medical history revealed that he had suffered from episodes of fever, vomiting and general malaise in the past two weeks and he had been admitted in a private hospital and treated for typhoid fever. He was discharged a week ago and he was now medically fit apart from the headaches and other problems with the eyes.

The drugs he used included chloramphenicol capsules, Amoxil tables, Quinine and one other drug, which he could not remember. There was no history of hypersensitivity to any known drug.

Family ocular and medicinal history did not reveal any significant finding.

Visual acuities at 6m

OD = 6/9

OS = 6/9

OU = 6/12

Visual acuities at 40cm

OD = N6

OS = N6

OU = N6

Pupils were equal and round and responsive to light and accommodation.

Extra-ocular muscle movements appeared normal and smooth, but cover tests revealed left non-concomitant esotropia, there was no nystagmus or ophthalmoplegia. Visual fields were normal to confrontation.

Intra-ocular examination using the monocular direct ophthalmoscope revealed blurred disc margins in both eyes and all other findings were within normal limits. **Dilated funduscopy** did not reveal any additional information apart from bilateral papilloedema. Spontaneous venous pulsation was absent even with digital pressure to the eye ball.

The patient was referred back to his physician as a suspicion of raised intra-ocular pressure, bilateral optic neuritis or reaction to the systemic drugs used was made. Patient claimed he did not immediately return to his physician until four days later when another episode of fever, malaise and confusion occurred.

He was again treated for typhoid fever but was referred to the University of Benin Teaching Hospital 3 days later when he had episodes of tremors and seizures.

There a CT scan was done as well as other diagnostic tests, and a diagnosis of tuberculous meningitis was made.

The patient was placed in intensive care where antibiotics and anti-tuberculosis drugs were administered for a period of six weeks before he was discharged, but continued medication. The patient was seen 6 weeks after discharged. The papilloedema was gone leaving a slight optic atrophy, V.A was 6/12 in both eyes, patient still reported episodes of memory loss and confusion but was otherwise fine.

DISCUSSION

Tuberculous meningitis is a form of meningitis that occurs in people who have tuberculosis. It may have acute to sub-acute presentation.

Symptoms include headache, vomiting, photophobia and fever. The duration of presentation may vary from one day to nine months. In most cases, it is within one month, most subjects do not report meningeal signs. Symptoms may include bilateral papilloedema monocular or bilateral diplopia, isolated cranial nerve palsies, acute confusional states, etc.

In some cases, fundus examination may reveal the presence of a retinal tuberculoid, which is a small grey choroidal nodule, which is highly suggestive of tuberculosis.

In some cases, tuberculous meningitis may be associated with tremors and other movement disorders.

Other forms of Tuberculous meningitis include tuberculous, serous meningitis characterized by mild meningitis with spontaneous recovery and tuberculous encephalopathy which occurs in young children with primary tuberculosis. These forms are rare.

Tuberculosis meningitis is difficult to diagnose and usually a high index of suspicion of tuberculosis is needed to make an accurate diagnosis. MRI and CT scans are usually required in making the diagnosis, CSF findings include raised pressure, protein levels of 100-500mg/dl, WBC of 10-500/m³ and hypoglycorrhachia. Bacterial cultures require several weeks and polymerase chain reaction technique for mycobacterium tuberculosis is very useful.

Pathophysiology

When a pathogen comes in contact with the barrier protecting the brain or the blood brain barrier, meningeal inflammatory response is elicited.

This inflammation results in headaches and cranial nerve palsies. The inflamed tissues may elicit a protective reflex which is detected as stiff neck or meningeal sign. When cerebral edema and raised intracranial pressure occurs, alteration in mental status, headaches, seizures, papilloedema and field loss, and cranial nerve palsies may occur.

CONCLUSION

The initial symptoms in meningitis can be very similar to those of many other diseases that are common in our environment, especially where the meningeal signs are absent, **ocular findings** may be one of the earliest pointers to the presence of the disease. Optometrists

should therefore pay serious attention and suspect meningitis in a condition of diplopia and papilloedema.

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