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Clinical Profiles of Patients with Optic Neuritis and Papillitis

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Abstract

Background and Aim: Optic neuritis causes substantial visual impairment and potential long-term visual defects in addition to serving as an important prognostic indicator for future development of demyelinating diseases such as multiple sclerosis. Hence this study was done with the objective to collect data of the clinical profile in patients of optic neuritis.

Materials and Methods: A prospective analysis was done for the patients clinically diagnosed with optic neuritis. A total of 60 patients were included in the study. Patients admitted with optic neuritis after taking valid consent detailed history was taken, with documention of onset of visual loss, duration of visual loss, pain and history of any other ophthalmic and neurological symptoms.

Results: Of the total 120 eyes of 60 patients were inspected, the left eye was more commonly diagnosed with neuritis and papillitis. DOV was seen as the chief complain in majority of patients with optic neuritis, 21 patients complained of pain with eye movements and twelve patients complained of non specific pain in an around the eye. Four patients had uthoffs phenomenon.

Conclusion: All patients treated were treated with ONTT trial and also investigated for cause and follow up done. The results revealed that the prevalence of papillits were almost equal in males and females. Patients responded quickly to ONTT regimen while papillits recovered late. VA improvement after ONTT was statistically significant. Colour vision and contrast also improved. Our study showed that ONTT regimen has benifit in optic neuritis with fast Visual recovery.

Keywords: Clinical Profile; optic Neuritis; ONTT; Papillitis.

Introduction

The optic nerve develops in the substance of the optic stalk. This stalk, which becomes apparent at the fourth week of gestation, has a wide circular lumen that is continuous with the cavity of the forebrain at one end and the optic vesicle at the other.[1]

Optic papillitis is a specific type of optic neuritis. Inflammation of the optic nerve head is called "papillitis" or "intraocular optic neuritis"; inflammation of the orbital portion of the nerve is called "retrobulbar optic neuritis" or "orbital optic neuritis". It is often associated with substantial losses in visual fields, pain on moving the globe, and sensitivity to light pressure on the globe.[2]

Optic neuritis causes substantial visual impairment and potential long-term visual

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defects in addition to serving as an important prognostic indicator for future development of demyelinating diseases such as multiple sclerosis.[3] So ophthalmologist has a very significant role to aid in prevention of full blown MS. Fortunately, in most cases, optic neuritis recovers either spontaneously or with treatment. Recovery can be partial or absolute, depending largely upon severity and co-existing conditions.[4, 5]

Walsh and Hoyt (1969) has described optic neuritis as the general term used to describe involvement of the optic nerve as the result of any inflammation, demyelination or degeneration.[6] The term optic neuritis according to Chamlin (1953) is technically incorrect in as much as cases what we refer to as optic neuritis is not always inflammation of the optic nerve as the term implies, but also degeneration or demyelination as caused by plaques of multiple sclerosis.[7]

In developing countries like India the clinical profile of optic neuritis is somewhat different. Not many studies have been done on optic neuritis. A few studies clarify that the scenario in Indian subcontinent is different as infectious diseases play a important role in causation of optic neuritis and prognosis is not so good. Hence this study was done with the objective to collect data of the clinical profile in patients of optic neuritis.

Materials and Method

The present study was done in the department of ophthalmology and neurology in the medical college and associated hospital. A prospective analysis was done for the patients clinically diagnosed with optic neuritis. The ethical committee of the institute was informed about the study and the ethical clearance certificate was obtained prior to the start of the study. The patients were informed about the study and the consent was signed before their inclusion in the study. A total of 60 patients were included in the study.

Patients admitted with optic neuritis after taking valid consent detailed history was taken, with documention of onset of visual loss, duration of visual loss, pain and history of any other ophthalmic and neurological symptoms. Clinical examination included Snellen's visual acuity testing, evaluation of pupils. Parainfectious and postvaccinated optic neuritis were excluded from the study. Other causes of disc edema like ischemic optic neuropathy, traumatic neuropathy were thouroughly ruled out. Cases thought to have other neurological deficits were referred to neurologist for evaluation.

Haemogram, total and differential white blood count, erythrocyte sedimentation rate, chest X ray, mantoux test, and serology for syphilis, toxoplasmosis, HIV were obtained in all cases. Magnetic resonance imaging (MRI) of the brain and orbit with contrast were done in patients who were affordable and suspected to have demyelinating disease and retroorbital mass. Patients with contraindications to systemic steroids like active systemic infection, uncontrolled diabetes etc were excluded from study. All patients were treated as per treatment guidelines i.e ONTT regimen which consisted of Injection Methyprednisolone 1g for 3days followed by oral prednisolone 1g/kg/body wt for 11 days and then tapered. Patients suspected of infectious cause of optic neuritis were supplemented with systemic antibiotics. Data was recorded in a specially designed proforma which was transferred to master sheet. The data was subjected to statistical analysis by the biostatistician of our institution.

Results

A total of 60 patients who meet the inclusion criteria were included in the study. The study was conducted over the duration of one year. The included patient's age ranged from 15 years to 55 years. Maximum numbers of patients were in the age group of 41 to 50 years. Minimum numbers of patients were in age under 20 years and also above 55 years. Out of the total sixty patients there were 38 females and 22 males. The complete history was recorded and the risk factors that are associated with optic neuritis were smoking, alcohol, tobacco, pregnancy and diabetes.

Of the total 120 eyes of 60 patients were inspected, the left eye was more commonly diagnosed with neuritis and papillitis. DOV was seen as the chief complain in majority of patients with optic neuritis, 21 patients complained of pain with eye movements and twelve patients complained of non specific pain in an around the eye. Four patients had uthoffs phenomenon.

All patients with optic neuritis had pupil abnormality at presentation. 79.68% had RAPD and 20.32% had sluggishly reacting pupil. After treatment i.e at one week RAPD was detected in only 17.43%

of cases and at end of one month RAPD was noted in 8.25% of cases. In case of bilateral disease after treatment pupil was sluggishly reacting in 12.07% cases. At end of 3 months 86% had normal pupillary reflex.

At presentation denoted by blue line initially there were no cases with normal pupil reaction but after treatment the number of cases with normal pupil spiked at 1month. Also the number of cases with RAPD steeped downward than cases with sluggish reacting pupils in about 1 week duration.

Table 1: Chief complain of the patients recorded

Complaints	Optic Neuritis
DOV	27
Non specific pain	21
Pain with eye movements	12
Uthoffs Phenomenon	4

Table 2: Showing Papillary Reaction Comparison Before and After Treatment

	Clinical Presentation	One week	One month
Normal	0	68.29%	79.68%
Rapd	79.68%	17.43	8.25
Sluggish	20.32%	14.28	12.07

Discussion

Western data suggest that at least 50% of patients with ON will eventually develop MS, but studies from Asia and Africa present a contrasting scenario.[8] An Indian study conducted by Rohit Saxena et al.[6] before the commencement of the ONTT had indicated that the clinical profile of ON in our country may be different from that presented in the Western literature. Apart from the above studies no other study is available that clarifies the status of ON in India. The present study has been conducted with the aim of understanding the clinical picture of ON in India.

In our study 70% of the patients suffering from optic neuritis were in the age group of 3rd 4th and 5th decades of life. The age of presentation and female preponderance noted in the present study was similar to that reported by the ONTT and other studies conducted by Wakakura M et al.[9] and Wang JC.[10,11] Bilateral presentation was seen in 23.33% of the patients in the present study and compares to 16%-35% reported in other studies from this region conducted by Woung LC et al.[12] and Lim SA et al.[13], whereas an African study conducted by Pokroy R et al[14] has reported it to be as high as 80%.

All patients with optic neuritis had pupil abnormality at presentation. 79.68% had RAPD and 20.32% had sluggishly reacting pupil. After treatment i.e at one week RAPD was detected in only 17.43% of cases and at end of one month RAPD was noted in 8.25% of cases. In case of bilateral disease after treatment pupil was sluggishly reacting in 12.07% cases. At end of 3 months 86% had normal pupillary reflex.

Although it was not possible to do MRI in all patients, intracranial de-myelination changes consistent with MS were not seen in any patients. We acknowledge that there is a possibility of underestimation of MS in our study given the fact that MRI was not performed in all cases; however, other reports from the south eastern region of India also show low incidence of MS in the population from this part of the world.

The limitations of our study include not doing automated perimetry and not obtaining MRI in all cases. Despite that we found that ON in the Asian region is different from that reported in the Western population. Whether environmental factors, ethnicity, and genetic composition could play a role in the discrepancy in clinical profile in this region remains to be studied.

Conclusion

All patients treated were treated with ONTT trial and also investigated for cause and follow up done. The results revealed that the prevalence of papillits were almost equal in males and females. Patients responded quickly to ONTT regimen while papillits recovered late. VA improvement after ONTT was statistically significant. Colour vision and contrast also improved. Our study showed that ONTT regimen has benifit in optic neuritis with fast Visual recovery.

Ethical approval was taken from the institutional ethical committee and written Informed consent was taken from all the participants.

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Conflict of Interest: None declared

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