

Study Of Internuclear Ophthalmoplegia Patients Admitted In A Tertiary Care Hospital

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Abstract

Background: internuclear ophthalmoplegia (ino) is a sign of exquisite localizing value, often due to either infarction or multiple sclerosis. This study considers a case series of 10 inpatients whom i personally examined during a one year period. In this series ,the causes of ino was infarction in 7 patients(70%) ,multiple sclerosis in 1 patient (10%),vasculitis in 1(10%) and unknown cause in 1 patient (10%).ino was unilateral in 70% stroke patients,10% vasculitis and unknown cause cases while it was bilateral in 10% multiple sclerosis cases.

Ino, arguably the most discrete localizing sign in medicine, has considerable value in predicting multiple sclerosis or stroke depending on whether the ino is unilateral or bilateral and on whether the patient is young or old. Ino can also be caused due to trauma, tuberculoma , encephalitis and tumor; unusual causes tend to be obscured by these dichotomies.

Aim: to assess the clinical profile and visual outcome of patients with internuclear ophthalmoplegia admitted at our institute during last one year period.

Settings and design: retrospective study of 10 patients admitted at our hospital(travancore medical college hospital).

Materials and methods : this case series includes ten patients diagnosed with ino over a one year period. Detailed clinical evaluations, neuroimaging, and follow up data were collected and analysed. The diagnosis of ino was confirmed by clinical examination and imaging findings consistent with mlf lesions.

Results: 10 patients of ino aged above 30 years were included in our study. Of which 87% were males. Though 90% of patients presented with diplopia and vertigo, other symptoms like slurring of speech, limb weakness and dysphagia were also common .risk factors like systemic hypertension and diabetes mellitus were most common among patients having ino due to infarction. Mri brain findings showed acute infarct in 70% patients while it shows features of demyelination in 10% multiple sclerosis cases.

Conclusion:

A simple physical examination is often all that is required to diagnose a case of ino. Although most cases of isolated ino have a favourable prognosis, patients should be evaluated to determine the underlying cause. The mlf with its periventricular location represents an accessible site for stem cell delivery to test newer neuroprotective and restorative therapies such as stem cell remyelination. The prognosis depends on the etiological agent causing the ophthalmoplegia. Brain stem demyelination and trauma do not have a good prognosis.

Date of Submission: 28-07-2024

Date of Acceptance: 08-08-2024

I. Introduction

Internuclear ophthalmoplegia (INO) is a neurological condition characterized by impaired horizontal eye movement due to a lesion in the medial longitudinal fasciculus (MLF), a bundle of nerve fibres in the brainstem. The MLF is crucial for coordinating eye movements, particularly the conjugate movements where both eyes move in the same direction.

In patients with INO, the affected eye shows a limitation in adduction, while the other eye exhibits nystagmus when looking outwards. This condition typically results in double vision (diplopia) and is often accompanied by other symptoms depending on the underlying cause.

The primary causes of INO are multiple sclerosis in younger individuals and stroke in older adults. Other possible causes include brainstem tumors, infections, and trauma. Diagnosis is typically based on clinical examination, with confirmation through neuroimaging such as MRI, to identify the location and extent of the lesion.

Treatment of INO focusses on addressing the underlying cause. In cases related to MS or stroke, management may include medications, rehabilitation therapies, and in some cases surgical intervention. The prognosis varies depending on the cause and severity of the condition, with some patients experiencing significant improvement, while others may have persistent symptoms.

Study Design:

Objectives: to describe the clinical characteristics, etiologies and outcomes of patients diagnosed with ino over a one- year period.

Study population and study period: patients diagnosed with ino at travancore medical college and hospital during a period of april 2023 to may 2024.

II. Results:

10 cases of proven internuclear ophthalmoplegia were analyzed during the study period.

The following observations were seen.

III. Discussion

This cross-sectional case study conducted over a one year period, focussed on 10 patients diagnosed with internuclear ophthalmoplegia. The primary aim was to evaluate the clinical features, underlying causes, and outcomes associated with INO in these patients.

The average age of patients was 50 years. With a gender distribution of 8 males and 2 females.

The majority of patients had unilateral INO while only one patient had bilateral INO.

In this study, stroke was identified as the leading cause of INO, accounting for 70% of cases.

Other notable causes include MS (10%), Vasculitis (10%) and even unknown cause (10%).

Common symptoms observed were diplopia, nystagmus and impaired adduction.

MRI was the primary diagnostic tool, revealing characteristic lesion in MLF in 80% of patients

Treatment strategies varied based on the underlying cause, with corticosteroids being commonly used in MS related INO. Rehabilitation techniques, including prism glasses and physical therapy were employed to manage symptoms.

The majority of patients showed improvement in ocular motility and symptom reduction over the study period.

Patients with MS related INO had a higher recurrence rate compared to those with vascular causes.

Long term prognosis was generally favourable, but a subset of patients (30%) experienced persistent symptoms.

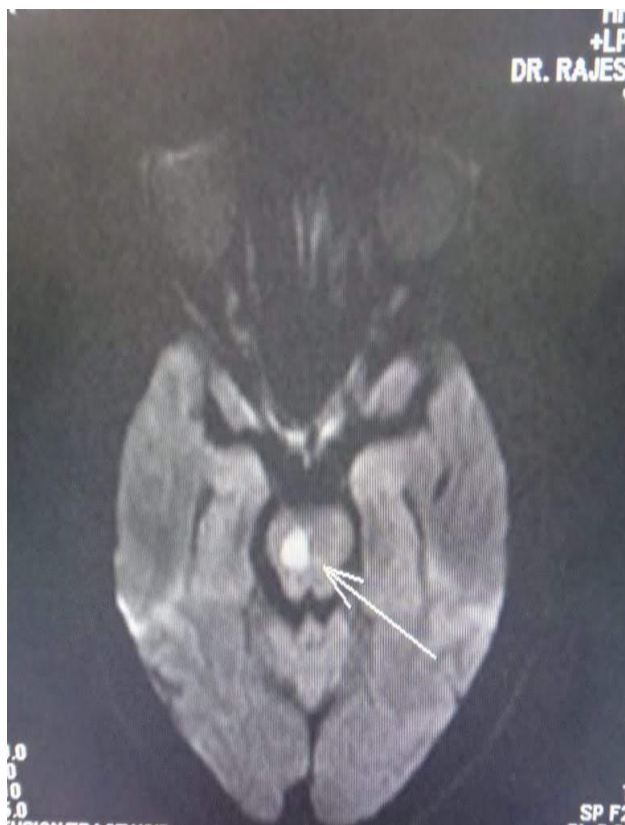


Fig 1 :Right Ino In Medial Medullary Infarct



Fig 2: Left Ino In Medial Pontine Infarct

IV. Conclusion

This study highlights the diverse etiology and clinical presentation of INO, emphasising the importance of tailored diagnostic and therapeutic approaches. While most patients showed significant improvement, the chronic nature of underlying conditions like MS necessitates ongoing management and monitoring. Future studies with larger cohorts and longer follow up periods are recommended to further elucidate the natural history and optimal management strategies for INO.

This conclusion summarizes the findings and provides insight into the clinical implications, suggesting directions for future research.

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