

Bruns Nystagmus in Multiple Sclerosis

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Abstract

We report on a 41-year-old female with incidental findings of bilateral optic disc pallor and Bruns' nystagmus. With further investigation, the patient was found to have a demyelinating disease. When seen by us for the first time for a complaint of improper eyeglasses readings, she was found to have a bilateral disc pallor, which was caused by demyelinating disease. Next visit she started to have Bruns' nystagmus, which showed a slower and larger beat with a left gaze. This is the first report to describe Bruns' nystagmus in one patient with demyelinating disease.

Keywords: Bruns Nystagmus; Multiple Sclerosis

Introduction

It has been documented that nystagmus or other eye movement disorders may occur with multiple sclerosis, but there has not been documentation of Bruns nystagmus in multiple sclerosis. The distinctive presentation of our patient serves as an important addition to the literature on nystagmus in multiple sclerosis.

Case Presentation

A 41-year-old female presented with a complaint of difficulty reading while using her eyeglasses. She had been wearing eyeglasses since childhood and only became uncomfortable with them for the last year. She developed headache once off glasses and relieved with using them. She had no other visual complaints or neurological symptoms. Her history was significant for thyroid cancer; multifocal papillary carcinoma, status post total thyroidectomy for more than 5 years. She denied any radiation or chemotherapy. On examination, her best-corrected visual acuity was 6/18 for both eyes. Pupils were round, regular and reactive with no relative afferent pupillary defect. Her extraocular movements were full and with no nystagmus. Anterior segment exam was insignificant. Posterior segment exam showed bilateral optic pallor.

In view of previous history of thyroid cancer, we ordered MRI brain and orbit to rule out any compressive lesions. It came back significant for active demyelination of white matter (Figure 1 and 2). Patient was referred to neurology where she admitted that she had gradual

slowed deterioration of her motor power over years. Lumber puncture and blood investigations were done and confirmed diagnosis of multiple sclerosis. In her next follow up, a high frequency, small amplitude jerk horizontal left-beating nystagmus on leftward gaze and a low frequency, large amplitude jerk horizontal right-beating nystagmus on rightward gaze, consistent with Bruns' nystagmus were appreciated. This indicates the possibility of new demyelinating lesion on right pontine (Figure 3).

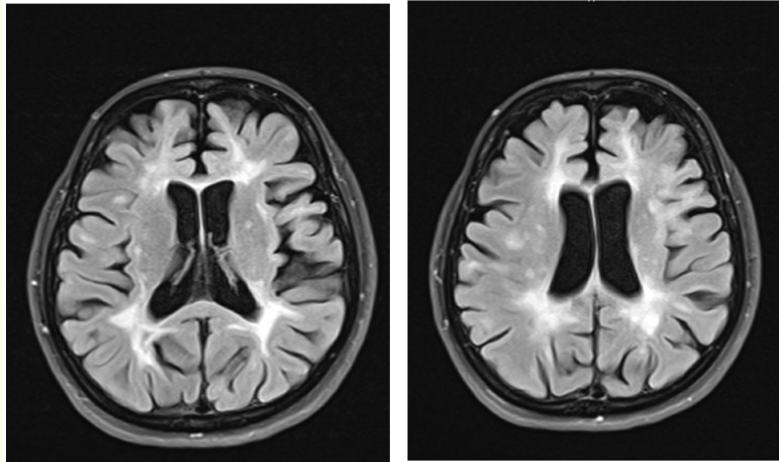


Figure 1: MRI T2 FLAIR sequence demonstrating multiple enhanced and non enhanced periventricular and Juxtacortical lesions suggestive of demyelinating disease.

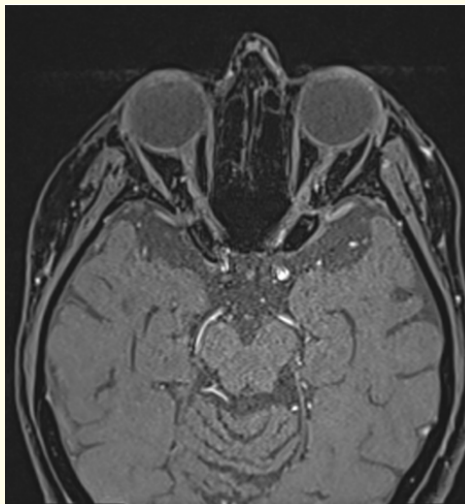


Figure 2: MRI T1weighted images with fat suppression demonstrating bilateral optic atrophy with decreased in its diameter.

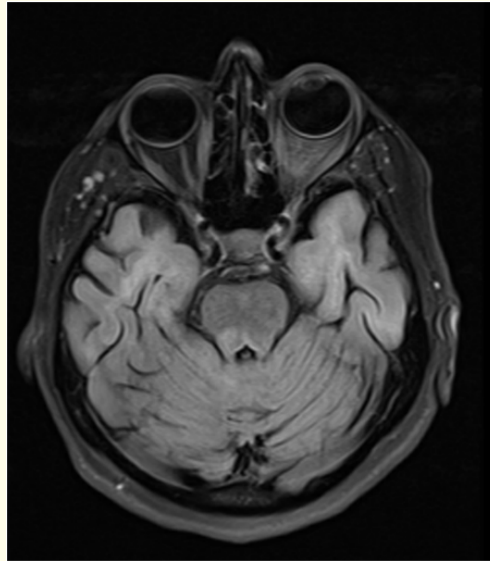


Figure 3: MRI T2 FLAIR sequence demonstrating an enhanced lesion at the right side of the pons explaining the presence of Bruns Nystagmus.

Discussion

Bruns' nystagmus is a bidirectional jerk nystagmus. It is characterized by low-frequency, large-amplitude horizontal nystagmus when looking toward the side of the lesion, and high-frequency, small-amplitude nystagmus when looking away from the lesion. The large-amplitude nystagmus is caused by compression of the ipsilateral pons causing an impaired neural integrator resulting in inability to maintain eccentric gaze toward the side of the lesion. On the other hand, vestibular dysfunction leads to decreased tonic firing, which results in a slow-phase movement towards the side of the lesion with a compensatory fast-beating component in the contralateral direction [1]. Bruns' nystagmus localizes to the cerebellopontine angle and is most commonly indicative of a mass lesion.

It occurs in 11% of patients with vestibular schwannoma, and occurs mainly in patients with larger tumours; 67% of patients with tumors over 3.5 cm diameter [2].

Bruns nystagmus, not often, has also been reported in pontine stroke and cerebellar apoplexy [3]. No published articles or cases reporting Bruns nystagmus in Multiple Sclerosis. This is the first report to describe Bruns' nystagmus in one patient with demyelinating disease.

Nearly all known types of eye movement disorder have been described in multiple sclerosis [4]. The commonest of which is internuclear ophthalmoplegia. Nystagmus of different types is very common in multiple sclerosis. Acquired pendular nystagmus occurs frequently in multiple sclerosis [5,6]. In the study of Gresty, *et al.* 12 out of 16 patients with acquired pendular nystagmus had multiple sclerosis [6]. Fisher, *et al.* described 11 patients with primary position up beating nystagmus, of whom two had multiple sclerosis [7]. While Down beating nystagmus is very uncommon in multiple sclerosis, although two patients were described by Masucci and Kirtzke [8].

Conclusion

Bruns Nystagmus is a worrisome finding and necessitates a thorough workup. Of most worry are organic lesions localized to cerebellopontine angle, such as stroke, tumors or other mass lesions. In our patient, she was found to have demyelinating lesions, lessens the likelihood of an intracranial tumor being present. We will continue to follow her up for any future symptoms or signs.

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