12th International Conference on
Central Nervous System

October 07, 2022 | Webinar

Received date: 01 October 2022 | Accepted date: 04 October 2022 | Published date: 20 October 2022

A case report: Optic neuritis as a primary manifestation of Multiple sclerosis in a patient treated with TNF-α inhibitors

Nina Špegel[1], Tadeja Skok[2]
[1]Eye Hospital University Medical Centre Ljubljana, Slovenia
[2]Institute of Oncology, Ljubljana, Slovenia

Introduction: Multiple sclerosis (MS) often manifests with a degree of visual dysfunction which can significantly impair the quality of life. Optic Neuritis (ON) is a common demyelinating disorder and may be a presenting feature of MS in up to 20% of patients (1). Tumour Necrosis Factor alpha (TNF-α) inhibitors are used for suppression of inflammatory processes in autoimmune diseases and arthritides. Despite a relatively good safety profile, there have been several reports of newly-onset central nervous system demyelinating manifestations, suggesting a causal role of TNF-α inhibitors (2, 3). We present a case of ON as a primary presentation of MS in a patient undergoing treatment with TNF-α blockers.

Case Report: A 21-year-old female presented with a 4-day blurring of vision in the left eye, accompanied by painful ocular motility. For the past 6 years she had been receiving treatment with monthly injections of etanercept due to juvenile idiopathic arthritis. She had a positive family history of MS. Ophthalmic examination revealed Best Corrected Visual Acuity (BCVA) of 0, 3 Snellen, and positive Relative Afferent Pupillary Defect (RAPD) and decreased colour perception (Ishihara test 9/21) in the left eye. Optic disc was swollen with irregular obscuration of borders (Figure 1) and Optic Coherence Tomography (OCT) showed increased thickness of peripapillary Retinal Nerve Fibre Layers (RNFL) (Figure 2a). Standard automated perimetry (SAP) showed significant diffusely decreased sensitivity, with nearly complete inferior altitudinal defect (Figure 3a). Right eye examination was unremarkable. She underwent neurologic examination without apparent anomalies. Head MRI revealed several typical demyelinating lesions (Figure 4). Lumbar puncture was performed, and the patient received intravenous pulse corticosteroid therapy (3 days of 1000 mg methylprednisolone daily). After three pulses, BCVA of the left eye increased to 1, 0 Snellen and colour perception improved (Ishihara test 21/21). Ocular motility pain and optic disc swelling were somewhat diminished. Upon discharge she commenced a corticosteroid tapering scheme with initial dose of 64 mg. At the last follow up, 2 weeks after discharge, there were no further symptoms reported, BVCA remained 1,0 Snellen and ocular motility was painless in the left eye. Ophthalmic examination showed some residual optic disc swelling. OCT showed improvement in thickness of RNFL layers (Figure 2b) and SAP had few non-specific localised spots of decreased sensitivity (Figure 3b).

Conclusion: While TNF-α inhibiting medication represents a crucial breakthrough in the treatment of arthritis, its effects on demyelination processes remain incompletely understood. Further research is needed to achieve better insight into the relationship with MS. Any patients on TNF-α medication should be closely monitored for any newly developed neurologic signs or symptoms.

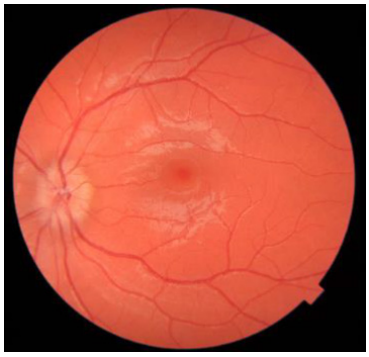

Figure 1: Optic nerve photograph of the left eye with swollen optic disc and irregular borders.

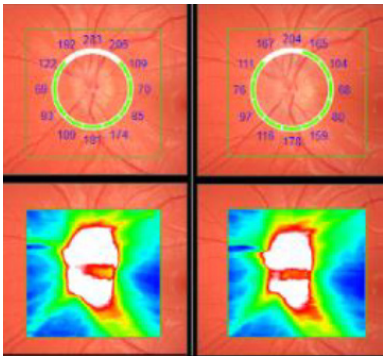

Figure 2: Optic coherence tomography showing thickened retinal nerve fibre layers of the left optic nerve at presentation (2a) and after treatment (2b).

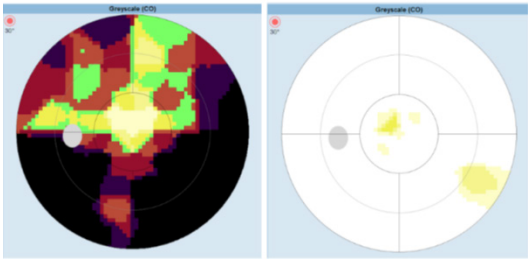

Figure 3: Standard automated perimetry at presentation (3a) with diffuse decrease in sensitivity and altitudinal visual field defect, MD 19,7 dB, slV 7,6 dB; with improvement after treatment, MD 0,8 dB2,4 dB, slV (3b).

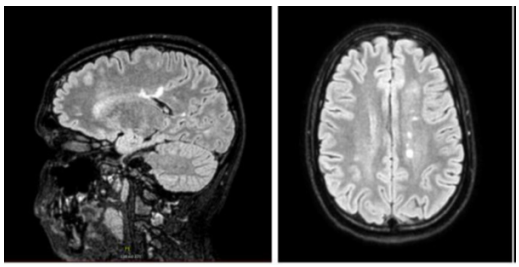

Figure 4: Sagital FLAIR sequence image demonstrating typical ovoid hyper intensive periventricular lesions (called Dawson fingers). Axial FLAIR sequence image with several periventricular white matter hyper intensive lesions.

Recent Publications

1. Frohman EM, Frohman TC, Zee DS, McColl R, Galetta S. The neuro-ophthalmology of multiple sclerosis. Lancet Neurol. 2005 Feb;4(2):111–21.
2. Kemanetzoglou E, Andreadou E. CNS Demyelination with TNF-α Blockers. Curr Neurol Neurosci Rep. 2017 Apr;17(4):36.
3. Mohan N, Edwards ET, Cupps TR, Oliverio PJ, Sandberg G, Crayton H, et al. Demyelination occurring during anti-tumor necrosis factor alpha therapy for inflammatory arthritides. Arthritis Rheum. 2001 Dec;44(12):2862–9.

Biography

Nina Špegel is currently working as a trainee doctor in an Ophthalmologist's office. In her work she often comes across patients whose pathology exceeds purely ocular manifestations, therefore she finds a multidisciplinary approach essential to provide a high standard of patient care.

spegel.nina@gmail.com