

# Optic neuritis in an ankylosing spondylitis patient treated with adalimumab: a case report

**Subjective:** To describe a case of optic neuritis following initiating treatment with Adalimumab  
**Method:** this case was evaluated by visual field testing, fundoscopic examination and brain Magnetic Resonance Imaging (MRI).

**Results:** After receiving Methylprednisolone and tapering with Prednisolone this patient had a complete recovery. There was no sign of recurrence after 6 months of follow-up.

**Conclusion:** In this case the proximity of starting the symptoms to initiating the treatment with Adalimumab and complete recovery after cessation of the drug and corticosteroid treatment can suggest a causal association.

**Keywords:** anti-TNF $\alpha$  • adalimumab • optic neuritis

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## Introduction

Ankylosing Spondylitis (AS) is a chronic inflammatory disease that affects the sacroiliac joints, spine, peripheral joints, and entheses [1]. Adalimumab is an inhibitor of tumor necrosis factor  $\alpha$  (TNF $\alpha$ ) that has been proved to be effective for reducing signs and symptoms of AS [2]. Different demyelinating disorders such as Optic Neuritis (ON), Multiple Sclerosis, Guillain-Barré and transverse myelitis have been reported to be associated with anti-TNF $\alpha$  drugs [3]. This case report aims to describe a case of ON due to treatment with Adalimumab. Other similar cases have been reported so far that might suggest the association between the two [4-7].

## Case Presentation

This case is a 38-year-old man with a history of AS for 6 years who has been treated with Methotrexate and NSAIDs, due to poor response to Methotrexate and need to take NSAIDs treatment with Adalimumab was initiated for this patient. Adalimumab was started with the dose of 40 mg/kg every two weeks subcutaneously. Adalimumab was used

under the brand name of Cinora, made by the pharmaceutical company Orchid pharmed. One week after receiving his second dose of the drug, the patient presented with the complaint of pain with movement and blurry vision of his right eye. Examination showed the visual acuity of the effected eye had been reduced to 4/10 and a relative afferent pupillary defect. No visual field defect, color blindness, photopsias and papillitis was reported. On fundoscopic examination optic nerve without any swelling or hemorrhage was seen. Visual evoked test showed a delay in P100 of the affected eye, which is the manifestation of slowed conduction in the optic nerve as a result of axonal demyelination. These findings helped rule out Ischemic Optic Neuropathies and leber's hereditary optic neuropathy as possible differential diagnosis. Magnetic Resonance Imaging (MRI) with Gadolinium contrast showed optic nerve inflammation and provided confirmation of the diagnosis of ON. Methylprednisolone with the dose of 1g every day was started for 3 days and then tapered with prednisolone. Complete resolution of the symptoms occurred after 1 month of cessation of Adalimumab and treatment with

Corticosteroids. Six month later a follow-up MRI was done with normal findings and after one year of follow-up no recurrences have been reported.

### Discussion

Anti-TNF drugs such as Adalimumab, Infliximab and Etanercept are proved to be effective for many immune mediated inflammatory diseases such as AS and are usually used when there's not adequate response to conventional treatment [8]. In 2006 a case series by Chung JH, et al reported two cases of ON in patients receiving Adalimumab [5]. In a cohort study done by Winthrop KL, et al 33,323 inflammatory disease patients who were recently taking anti-TNF $\alpha$  drugs were recruited, of which 3 patients developed ON ranging from 37 days to 221 days after initiating the drug. The crude incidence rate of ON was 10.4 per 100,000 person-years [9]. Another case report by Komandur A, et al discusses a case of rheumatoid arthritis who was treated with Adalimumab and prednisolone developed ON after self-

tapering corticosteroids [10]. In a review study done by Sismek I, et al 15 patients who were receiving anti-TNF $\alpha$  drugs and presented with ON were evaluated, of which 2 patients were receiving Adalimumab. One of the cases received pulse Methylprednisolone and experienced complete recovery within one week and no recurrence after 12 m, the other did not receive treatment and continued taking Adalimumab and experienced partial recovery after 4 m [11].

### Conclusion

Studies have shown the association of anti-TNF $\alpha$  drugs and demyelinating disorders, and other cases of Adalimumab receiving patients and ON although rarely, have been reported. For the case mentioned in the study the proximity of starting the symptoms to initiating the treatment with Adalimumab and complete recovery after cessation of the drug and corticosteroid treatment can suggest a causal association.

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