Letter to the Editor

Multifocal Motor Neuropathy Associated with Infliximab

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Abstract

Background: The anti-tumour necrosis factor [TNF] monoclonal antibody, infliximab, is commonly prescribed in both ulcerative colitis and Crohn’s disease. Neurological side effects such as optic neuritis are well recognised, although not as frequently seen as hypersensitivity and serious infections.

Case: We present a case of peripheral neuropathy in a young man on infliximab therapy for ulcerative colitis. This presented as an asymmetrical and slowly progressive weakness in his right upper limb, severely impacting on function. Investigations confirmed a diagnosis of multifocal motor neuropathy [MMN]. This has been previously described in patients receiving infliximab for rheumatological conditions. The exact mechanism is unclear, but the neuropathy responds well to intravenous immunoglobulin. In our case, infliximab was discontinued. The patient was treated with immunoglobin for 5 days and recovered rapidly. Mercaptopurine was instituted as maintenance therapy, with good effect.

Conclusion: Gastroenterologists prescribing infliximab should be cognisant of both peripheral and central neurological complications, ensuring prompt withdrawal of the offending agent and appropriate alternative treatment.

Keywords: Infliximab; motor neuropathy

The anti-tumour necrosis factor antibody infliximab is used in the treatment of Crohn’s disease and ulcerative colitis [UC]. Adverse effects include serious infections, hypersensitivity, and infusion reactions. Neurological side effects such as demyelination and optic neuritis are less common but are recognised. We present a case of multifocal motor neuropathy associated with infliximab.

A 30-year-old Slovakian male, diagnosed with UC in 2011, presented with an acute flare of his disease. The patient had pancolitis at diagnosis in Slovakia and was treated with corticosteroids followed with infliximab. He received three infusions of infliximab and was transitioned to azathioprine and mesalazine. In 2013, infliximab was introduced as maintenance therapy due to active disease and poor compliance with azathioprine. He achieved clinical remission on infliximab 5 mg/kg every 8 weeks, and continued this as maintenance therapy.

Two years after recommencing infliximab, the patient presented with a 6-month history of progressive upper limb weakness, most pronounced in his right upper limb. In particular he had difficulty lifting objects with his right arm. He was unable to work. He had no history of demyelinating disease or neuropathy. There was no known family history of multiple sclerosis. He denied any recent travel or toxin exposure.

Examination revealed weakness of right [3/5 power] and left shoulder abduction [4/5]. Hip flexion was 4/5 bilaterally. Reflexes were intact throughout and plantars were downgoing bilaterally. Cranial nerve examination was normal. There was no sensory deficit. MRI of brain and cervical spine was performed. There were no plaques or evidence of nerve root impingement. Nerve conduction studies confirmed a peripheral multifocal motor neuropathy with conduction block, affecting the right radial nerve and left median nerve. This finding was consistent with multifocal motor neuropathy.

Acetylcholine receptor Ab, GM1 ganglioside Ab, GQ1B ganglioside Ab, anti-MUSK Ab, anti-RO, anti-LA, anti-5m, ANCA, anti-Scl70, anti-Jo1, and ANA were negative.
Infliximab was discontinued and the patient received a 5-day course of intravenous immunoglobulin [0.4 mg/kg/day]. His neurological symptoms improved rapidly and he was started on mercaptopurine for treatment of his UC.

Multifocal motor neuropathy [MMN] is a rare autoimmune demyelinating disorder. There have been case reports in the literature describing MMN in association with infliximab in the treatment of rheumatological and inflammatory bowel disease.\textsuperscript{2,3,4} MMN usually presents as a slowly progressive asymmetrical weakness. The mechanism has yet to be fully elucidated, but it may result from the production of antibodies to gangliosides and other peripheral nerve epitopes. Typically it is not responsive to steroids and the first-line treatment is intravenous immunoglobulin.\textsuperscript{1}

Gastroenterologists prescribing anti-tumour necrosis factor therapy may be aware of central neurological complications, but also need to be alert to the possibility of rare peripheral complications that may necessitate cessation of the offending agent.

**Funding**

No funding was obtained.

**Conflict of Interest**

There was no conflict of interest.

**Author Contributions**

Review of the existing literature regarding multifocal motor neuropathy was performed by CR. In addition to this, she undertook review of the medical chart and relevant investigations. GC and NT were involved in drafting the manuscript and in the final revisions before submission.

**References**