



Multifocal Motor Neuropathy following treatment with Adalimumab for Ulcerative Colitis

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Introduction

Anti-tumor necrosis factor- α (anti-TNF) monoclonal antibodies are currently used in patients with inflammatory bowel disease. Neurological involvement, including demyelinating neuropathies, are increasingly reported among patients treated with these agents. We report a case of Multifocal Motor Neuropathy (MMN) following treatment with Adalimumab for Ulcerative Colitis.

Case presentation

A 29-year-old man with Ulcerative Colitis, after treatments with beclomethasone and mesalamine, started Adalimumab every two weeks in January 2016. On June 2016, he complained with mild left hand weakness, which spontaneously recovered in about three weeks. In August 2016, two days after Adalimumab administration, the left hand weakness relapsed. The therapy with Adalimumab was stopped. The patient underwent our visit 10 days later.

- **Neurological examination:** weakness (MRC 3/5) of left wrist extensors, finger extensors. All sensory modalities were normal as well as other neurological data.
- **Neurophysiological studies (EDX):** left radial nerve neuropathy with sparing of brachioradialis innervation, motor conduction block between the spiral groove and proximal forearm (fig.1), and normal sensory conduction. NCS was normal in the other nerves.
- **Ultrasound study:** increased cross sectional area of the left radial nerve at the third distal segment in the arm (fig. 2).
- **MRI of brain and cervical spine:** unremarkable.

Since the patient was spontaneously improving, we did not start any treatment. However, two weeks later, he suddenly developed weakness in his left leg, without any sensory symptom.

- **Neurological examination:** weakness (MRC 3/5) of left wrists extensors, left finger extensors, left quadriceps. All sensory modalities were normal as well as other neurological data.
- **EDX:** neurogenic damage without denervation in left quadriceps with reduction of compound muscular action potential amplitude after left femoral nerve stimulation (fig.3). Normal NCS in the other nerves (except left radial).
- **Lumbar puncture:** mild protein increase (65,9 mg/dl, n.v. 15-45) with normal cell count.
- **Antibodies anti GM1:** negative.
- **Ultrasound study:** increased cross sectional area with hypoechoic fascicular structure of left femoral nerve at inguinal point.

The patient received a 5-day course of intravenous immunoglobulin (0.4 mg/kg/day), which was followed by an improvement of his neurological symptoms. One month later, neurological evaluation was completely normal.

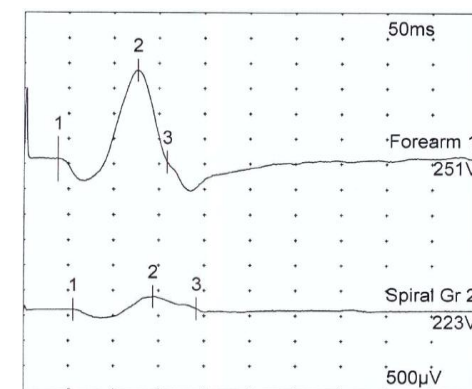


Fig.1 Motor conduction block between the spiral groove and proximal forearm in left radial nerve

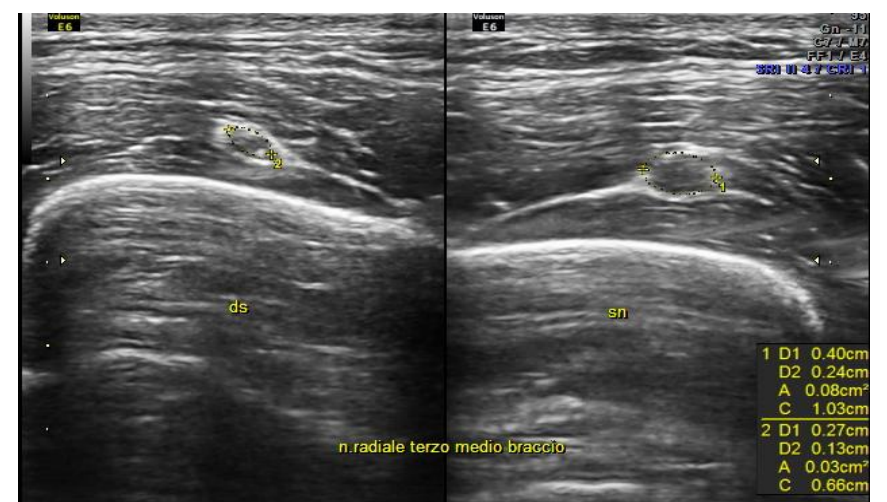


Fig.2 Increased CSA of the left radial nerve compared to right one

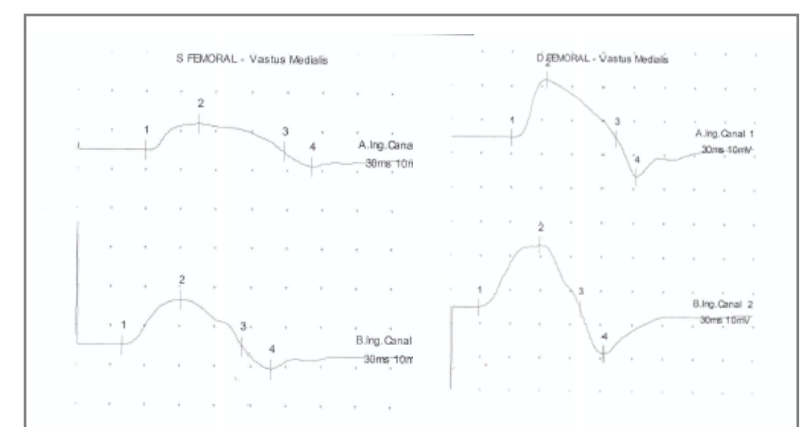


Fig.3 Reduction of cMAP amplitude after left femoral nerve stimulation

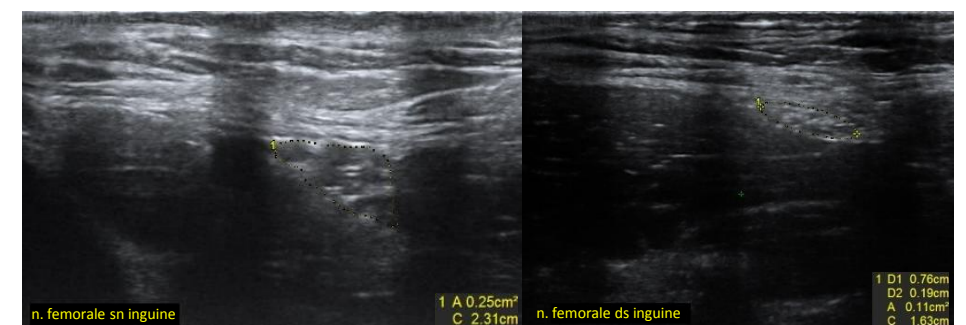


Fig.4 Enlargement and fascicular structure in left femoral nerve, compared to right one

Conclusion

MMN after treatment with anti-TNF agents, usually Infliximab has been rarely reported. To our knowledge, this is the first case of MMN following Adalimumab administration.