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Short Communication

A case of longitudinally extensive transverse myelitis following vaccination against Covid-19

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ABSTRACT

Background: Longitudinally extensive transverse myelitis (LETM) is a rare subtype of transverse myelitis (TM) that potentially results in relevant disability. Apart from association to neuromyelitis optica and other chronic demyelinating diseases of the central nervous system, many other aetiologies are known. Particularly systemic infections and vaccination are considered potential triggers for immune mediated inflammation of the spinal cord. In the course of the current Covid-19 pandemic several cases of TM following Covid-19 infection have been described. Here we present a case of LETM following vaccination against Covid-19 with AZD1222, AstraZeneca. An extensive diagnostic work up was performed to rule out alternative causes, including prior and current Covid-19 infection.

Conclusion: To our knowledge this is first case of LETM possibly related to Covid-19 vaccination that is published after marketing authorisation of various vaccine candidates.

1. Introduction

Longitudinally extensive transverse myelitis (LETM) is a rare subtype of transverse myelitis (TM) extending three or more consequent vertebral segments (Wingerchuk and Weinshenker, 2013). As the condition often results in relevant disability, a rapid and systematic diagnostic work up is necessary to identify the particular aetiology in order to initiate appropriate treatment as soon as possible. LETM can be part of NMOSD, multiple sclerosis and other autoimmune diseases, but many other aetiologies have to be considered as well (Kitley et al., 2012). Myelitis in general most commonly is induced by direct infection or para- and post-infectious autoimmune mediated inflammation (Agmon-Levin et al., 2009; Karussis and Petrou, 2014; Transverse Myelitis Consortium Working Group, 2002; West et al., 2012). In a similar manner various environmental factors have been regarded as a comparable trigger for autoimmune myelitis, particularly vaccination (Agmon-Levin et al., 2009; Karussis and Petrou, 2014). Here we present a case of LETM following the first dose of Covid-19 vaccination with AZD1222, AstraZeneca.

2. Case presentation

A 45-year-old male was admitted to our emergency ward with poor general condition, thoracic back pain and urinary retention. Apart from an atopic dermatitis, which did not require immunotherapy, there was no significant comorbidity. Eleven days before admission he had received the first dose of Covid-19-Vaccine (AZD1222, AstraZeneca) followed by an episode of chills, fever, headache and tiredness for two days. After initial improvement, symptoms worsened again on day eight with chills, new onset of headache, thoracic back pain and general weakness.

In the initial neurologic examination no motor or sensory dysfunction could be objectified, though urinary retention required catheter insertion. There was no fever or other signs of systemic infection. Nasopharyngeal swab was negative for SARS-CoV-2-RT-PCR. Within one day after admission the patient developed an acute flaccid tetraparesis, emphasizing lower limbs, and a sensory level at Th9.

MRI revealed a LETM lesion showing T2 hyperintense signal of the spinal cord with wide axial and longitudinal extent reaching from C3 to Th2 without gadolinium enhancement (Fig. 1A). A brain MRI was normal. CSF analysis showed a predominantly polymorphonuclear pleocytosis of 481 cells/µl (67% granulocytes), increased protein (1,4 g/

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