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Letters to the Editor

Myelin oligodendrocyte glycoprotein associated disorder following SARS-CoV-2 vaccination

One week after receiving the second dose of the BBIBP-CorV vaccine (Sinopharm*), a 34-year-old right-handed man developed bilateral and severe painful visual loss. Simultaneously, he felt numbness and weakness in his lower extremities with difficulty urinating. At his neurologic nadir three days from onset, he became confined to a wheelchair and developed an acute urinary retention that required an indwelling urinary catheter. Neurologic examination at admission, three weeks after the symptom onset, revealed paraplegia (MRC grade 0/5) and sensory level at D4. Ophthalmologic examination revealed severe bilateral visual loss (count fingers at near) and bilateral disc edema (grade 1) on fundoscopy. Magnetic resonance imaging (MRI) of the spine revealed a longitudinal hypersignal of the spinal cord from the lower cervical segment to the conus medullaris (Fig. 1). Brain MRI was normal. Cerebrospinal fluid analysis showed an elevated white blood cell count of 80 cells/mm^3, elevated protein at 2.37 g/l, normal glucose and no oligoclonal bands. Serum aquaporin-4-IgG was negative and serum myelin oligodendrocyte glycoprotein (MOG)-IgG was positive. The patient was diagnosed with MOG-IgG-associated disorders (MOGAD) and treated with 1 g intravenous methylprednisolone once daily for seven days. He had a good recovery of his visual acuity (on control examination: right eye 10/10, left eye 4/10, no papilledema on fundoscopy) but no improvement in his leg weakness. The patient subsequently underwent six cycles of plasma exchange with mild improvement of the weakness (MRC grade 2). Oral prednisone (1 mg/kg/day) was started in addition to osteoporosis prophylaxis with a slow tapering plan. The patient was transferred to a rehabilitation unit.

To date, the debate about the link between demyelinating central nervous system disorders (DCNSD) and vaccination is still ongoing. The different studies that were conducted demonstrated no association between vaccines and DCNSD [1]. In a multicenter cohort of MOGAD, two patients presented disease onset in an interval of two weeks after

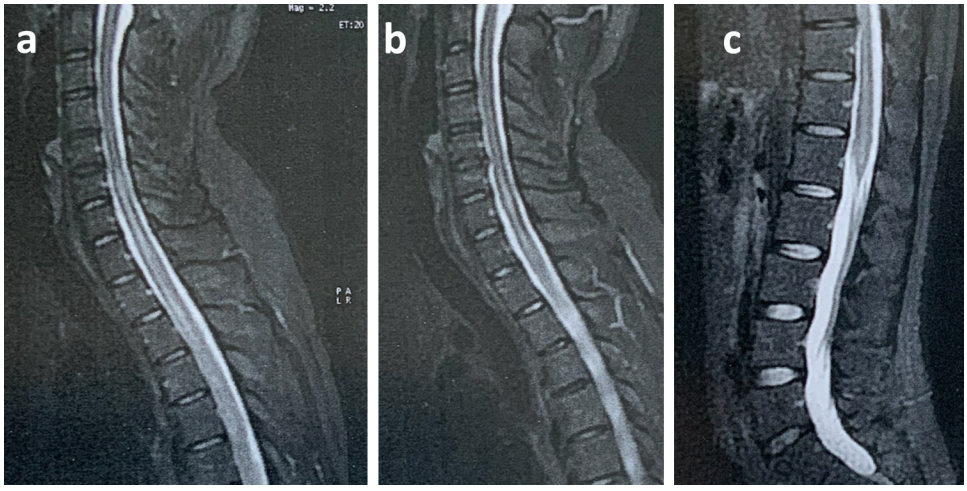

Fig. 1 – Spinal MRI on T2WI demonstrating a longitudinal hypersignal of the spinal cord from the cervical segment (C5-C6) (a and b) to the conus medullaris (c).

vaccination. In one case, the vaccine was against diphtheria, tetanus, and pertussis. In the other one, the patient was revaccinated against diphtheria, tetanus, pertussis, polio and influenza [2]. In a recent systematic review of DCNSD in the setting of Sars-Cov-2 infection, three cases of MOGAD were reported of which two patients presented with bilateral optic neuritis [3]. In the other hand, cases of transverse myelitis have been reported in the Centers of Disease Control Vaccine Adverse Event Reporting System as adverse reactions to the Sars-Cov-2 vaccines [4]. The BBIBP-CorV vaccine is an inactivated virus vaccine that has 100% homology for the spike protein and induced production of neutralizing antibodies against SARS-Cov-2 virus within two weeks after injection for 79%, 87% and 96% in participants aged 18-59 years with the 2 μg, 4 μg and 8 μg respectively. No neurological side effects were reported with the BBIBP-CorV vaccine in the clinicals trials [5]. In our case, the vaccination could have been a trigger that unmasked a demyelinating disease given the time between vaccination and symptom onset. To our knowledge, this is the first case report of a possible association between the BBIBP-CorV vaccine (Sinopharm*) and MOGAD.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed consent

Informed consent has been obtained from the patient.

Funding

Not applicable.

Disclosure of interest

The authors declare that they have no competing interest.

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