



# BEFORE QUADRIPARESIS WITH DYSPHAGIA CAN BE ATTRIBUTED TO COVID-19, ALL DIFFERENTIAL CAUSES MUST BE EXCLUDED

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## KEYWORDS

SARS-CoV-2 infection, dysphagia, botulinum toxin, quadriplegia, critically ill myopathy

## LETTER TO THE EDITOR

We read with interest Canta et al.'s article about a 61-year-old male with SARS-CoV-2 infection requiring intubation and mechanical ventilation for one month complicated by severe quadriplegia and dysphagia after extubation<sup>[1]</sup>. Muscle weakness was attributed to critically ill myopathy/neuropathy and dysphagia requiring placement of a percutaneous, endoscopic gastrostomy (PEG)<sup>[1]</sup>. Comprehensive rehabilitation led to an improvement in the quadriplegia, but dysphagia was initially refractory to treatment<sup>[1]</sup>. The dysphagia did not improve until reassessment using fibre-optic endoscopic evaluation of swallowing (FEES) and injection of botulinum toxin into the cricopharyngeal muscle<sup>[1]</sup>. The study is impressive, but some points should be discussed.

We disagree that oropharyngeal dysphagia in the index patient was due to SARS-CoV-2 infection as claimed<sup>[1]</sup>. Several reasons speak against a causal relationship. First, the delay between the onset of SARS-CoV-2 infection and the onset of oropharyngeal dysphagia was at least four weeks. Such a long latency argues against the virus as the cause of dysphagia. Second, the patient was diagnosed with critically

ill myopathy/neuropathy. The authors mention that a patient critically ill with myopathy/neuropathy can be a cause of oropharyngeal dysphagia, as previously reported<sup>[2]</sup>. Third, various alternative causes of oropharyngeal dysphagia have not been adequately ruled out.

The major differential cause of quadriplegia and dysphagia that has not been ruled out is Guillain-Barre syndrome (GBS). Surprisingly, no attempt was made to have GBS off the table as the cause of the clinical presentation. GBS is a common complication of SARS-CoV-2 infections<sup>[3]</sup>. GBS is diagnosed according to the Brighton criteria based on the clinical presentation, nerve conduction studies (NCSs) and cerebrospinal fluid (CSF) analysis. There are different subtypes of GBS, including GBS with multiple cranial nerve involvement. Because the patient had vocal cord paralysis and this is often due to vagal nerve impairment, it is conceivable that the patient had GBS with radiculitis of the ninth and tenth cranial nerves. A strong limitation in this regard is that the index patient did not undergo NCSs. In a patient with suspected critically neuropathy, severe quadriplegia, muscle wasting and reduced tendon reflexes, it is imperative to exclude neuropathy of cranial or peripheral



nerves by NCSs as the cause of the clinical presentation. A second cause not sufficiently ruled out is encephalitis. SARS-CoV-2 infections can be complicated by infectious or immune encephalitis<sup>[4]</sup>. To rule this out, an MRI scan with a contrast agent and CSF studies are mandatory. Immune encephalitis following SARS-CoV-2 infection may be associated with or without antibodies associated with autoimmune encephalitis. Infectious encephalitis following SARS-CoV-2 infection may be due to SARS-CoV-2 or superinfections with other viruses, bacteria, or fungi. In summary, this excellent study has limitations that should be addressed before drawing final conclusions. Clarifying the weaknesses would strengthen the conclusions and could improve the study. Before quadriparesis with dysphagia can be attributed to SARS-CoV-2 infection, all possible differential causes must be sufficiently ruled out.

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