


COVID-19 associated Bell's palsy

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Key message

While rare, a diagnosis of Bell's palsy should be considered in young patients who test positive for SARS-CoV-2 infection and who also present with notable neurological facial signs and symptoms suggestive of lower motor neuron-type seventh cranial nerve palsy.

KEYWORDS

Bell's palsy, COVID-19, House-Brackmann facial nerve grading system

CLINICAL IMAGE

A 17-year-old Japanese male with no previous medical history presented with cough, fever, right-sided facial droop and incomplete right eyelid closure, no grossly perceptible right-sided forehead movement, right-sided facial weakness, and drawing of the face and mouth to the left side, suggesting lower motor neuron-type right seventh cranial nerve palsy. He had no symptoms suggestive of other cranial neuropathies or COVID-19 (diarrhoea, dysgeusia or dysosmia). He tested PCR-positive for SARS-CoV-2, and brain contrast-enhanced magnetic resonance imaging (MRI) showed asymmetric contrast enhancement of the right facial nerve (Figure 1, arrows), which might be suggestive of direct neurological findings of COVID-19-related Bell's palsy. His serum varicella zoster IgM and herpes simplex IgM were not elevated. He had not been vaccinated against COVID-19. He was diagnosed with right sided Bell's palsy due to COVID-19 and was treated with valaciclovir (1000 mg/day) and prednisolone (40 mg/day) as a part of a standard severe Bell's palsy regime. As of early 2020, the anti-virus drug remdesivir was not used because it had not been approved for use against COVID-19 in Japan. His pre-treatment House-Brackmann facial nerve grade was moderately severe dysfunction (grade IV), which gradually improved; he fully recovered (grade I)

approximately 6 weeks post-treatment (Figure 2). COVID-19-associated Bell's palsy is very rare (0.08%),¹ and only a few cases with brain MRI findings have been reported.² Physicians should be aware of this COVID-19-related neurological complication.

AUTHOR CONTRIBUTIONS

Kei Yamasaki is responsible for drafting the work and revising it critically for important intellectual content. Taiki Manabe is responsible for the conception or design of the work, and for the acquisition, analysis, and interpretation of the data for the work. Yuto Iwanaga is responsible for the conception or design of the work, and for the acquisition, analysis, or interpretation of the data for the work. Ryota Akaike is responsible for revising it critically for important intellectual content. Toshinori Kawanami is responsible for revising it critically for important intellectual content. Kazuhiro Yatera is responsible for final approval of the version to be published.

CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

Data sharing not applicable-no new data generated

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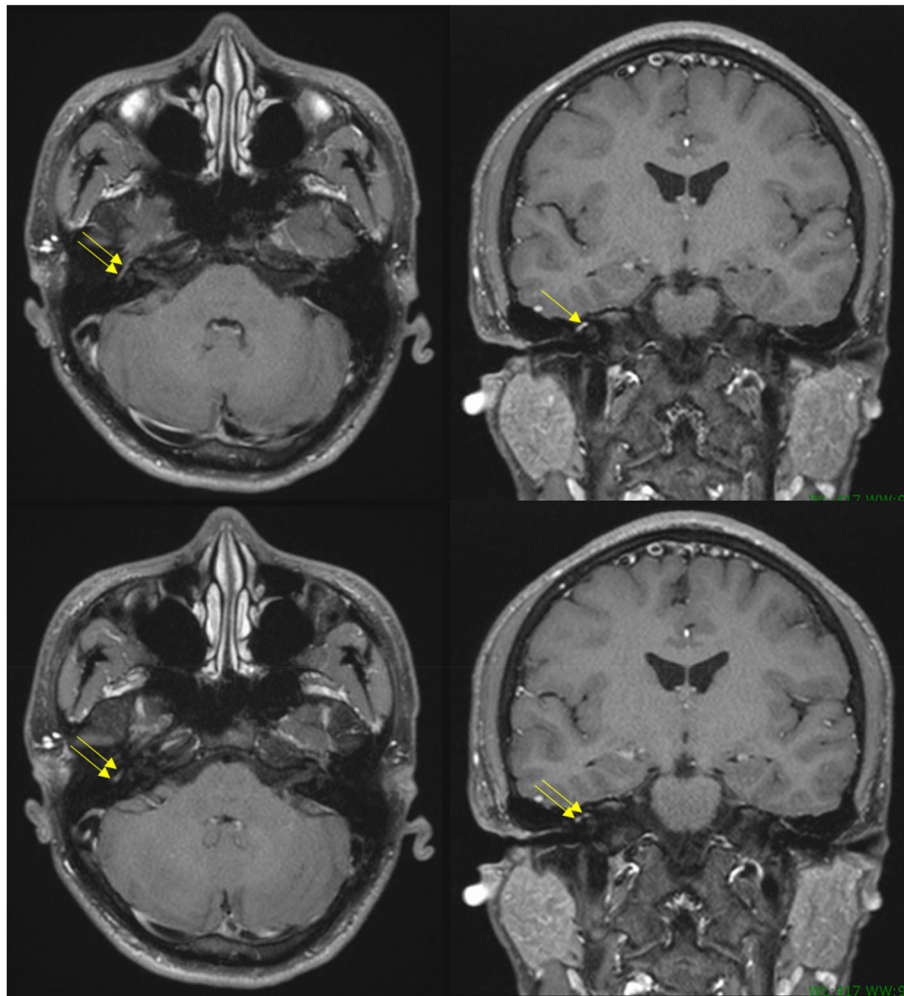


FIGURE 1 Brain contrast-enhanced magnetic resonance imaging showing asymmetric contrast enhancement of the right facial nerve (yellow arrows).

ETHICS STATEMENT

The authors declare that appropriate written informed consent was obtained for the publication of this manuscript and accompanying images.

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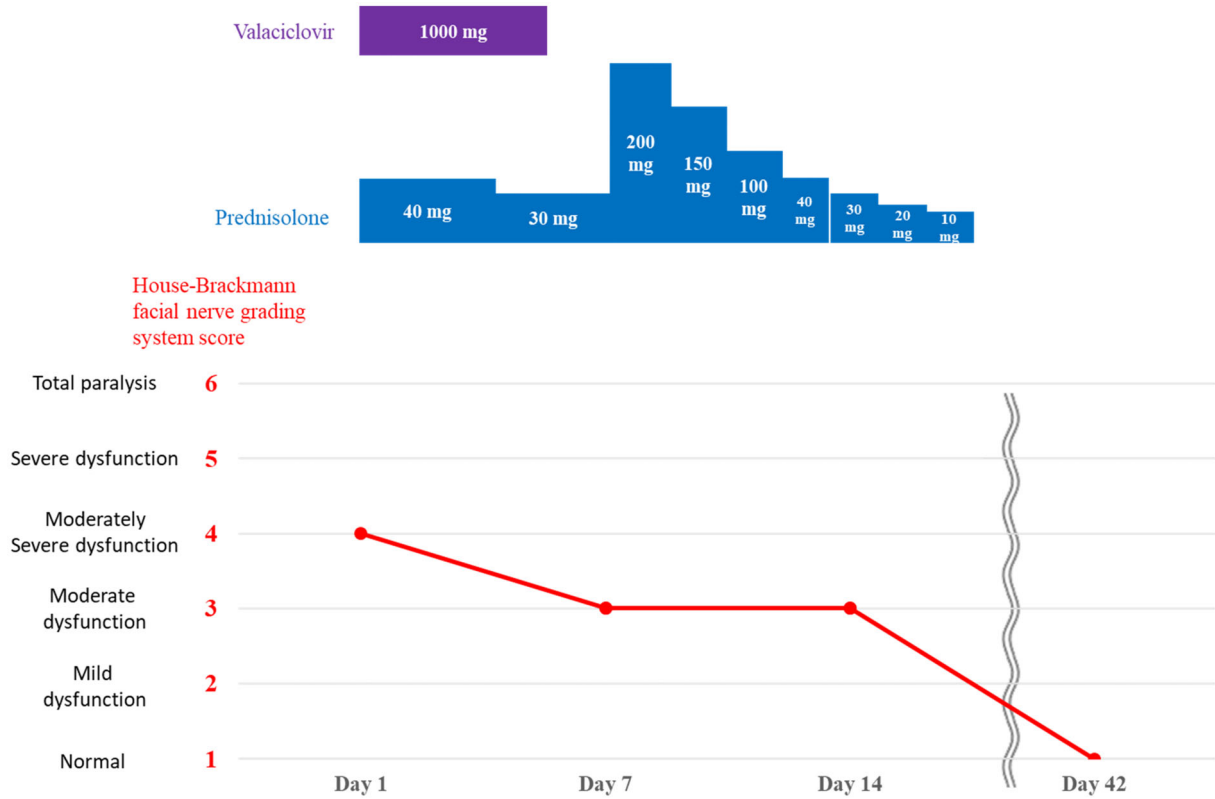


FIGURE 2 Valaciclovir (1000 mg/day) and prednisolone (40 mg/day) were administered for COVID 19-associated Bell’s palsy. The pre-treatment House-Brackmann facial nerve grade was moderately severe dysfunction (grade IV). On day 7, the facial grading system score was moderate dysfunction (grade III); hence, the prednisolone dose was increased to 200 mg/day. Following this, the patient’s score gradually improved and he fully recovered (grade I) approximately 6 weeks post-treatment.