Varicella zoster virus meningitis with rashes masked by a mask as a precaution for COVID-19

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DESCRIPTION

A 41-year-old man without prior vaccination of COVID-19 presented with a worsening headache accompanied by nausea and photophobia for 3 days. On physical examination, he was alert, with a temperature of 36.7°C, blood pressure of 105/60 mm Hg, pulse rate of 70/min, respiration rate of 16/min and oxygen saturation at 97% in ambient air. No signs of meningeal irritation or neurological symptoms were observed. His blood tests and head CT were unremarkable.

He wore a mask as a precaution for COVID-19. On removing the mask, rashes with blisters were observed on the left side of his nose and hard palate in the area of the second branch of the trigeminal nerve (figures 1 and 2). The patient experienced skin rashes and oral cavity dysesthesia before his visit, but believed them to be unrelated to the headache. The rapid test was positive for varicella zoster virus (VZV) (DermaQuick, Maruho, Osaka, Japan), and VZV infection was diagnosed. Additionally, aseptic meningitis was considered because of his worsening headache with photophobia, which prompted the cerebrospinal fluid (CSF) analysis to reveal an initial pressure of 16 cm H_2O, leucocyte count of 217/μL (lymphocytes 92%), protein level of 129 mg/dL and glucose level of 55 mg/dL (blood glucose level of 138 mg/dL). Hence, meningitis caused by VZV reactivation was suspected, and he received intravenous acyclovir for 14 days resulting in improvement of symptoms. A week later, his CSF tested positive for VZV DNA via PCR.

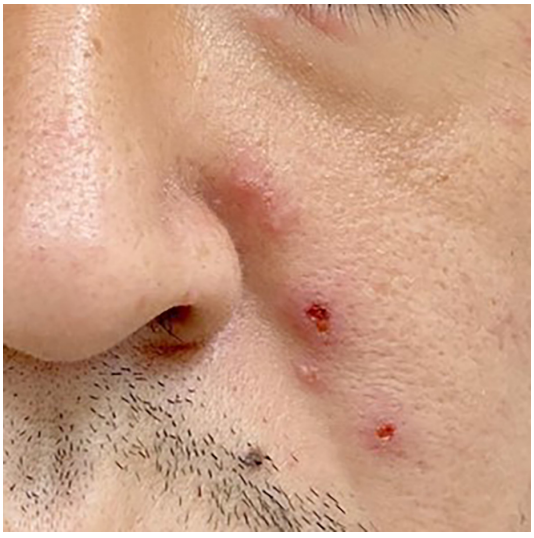

Figure 1 Rashes with blisters on the left side of his nose.

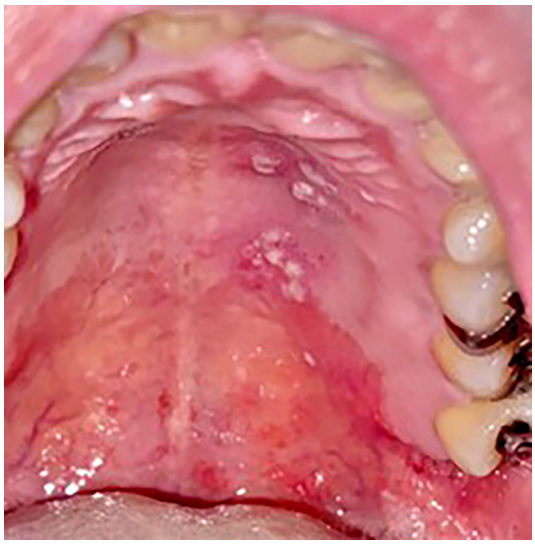

Figure 2 Rashes with blisters on the left side of his hard palate.

VZV reactivation causes meningitis most commonly seen in the area of the first branch of the trigeminal nerve,[1] and VZV accounts for 0.4%–13% of aseptic meningitis cases.[2] Shukla *et al* demonstrated that meningitis was considered when the patient presented with meningeal symptoms, such as headache, nausea and photophobia.[3] In our case, the removal of the mask led to the diagnosis of VZV infection and help initiate the rapid treatment to prevent complications. Of note, however, no skin rash is observed in up to 60% of VZV meningitis, referred to as 'zoster sine herpete'.[4] Infection control measures against COVID-19 reportedly led to diagnostic errors based on an inadequate physical examination.[5] In the COVID-19 era, it must be kept in

Learning points

- In the COVID-19 era, it must be kept in mind that mask usage can hinder the observation of disease-identifying symptoms.
- Infection control measures against COVID-19 reportedly led to diagnostic errors based on an inadequate physical examination.
- Meningitis is considered when the patient presented with meningeal symptoms, such as headache, nausea and photophobia.

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REFERENCES

1 Braun-Falco M, Hoffmann M. Herpes zoster with progression to acute varicella zoster virus-meningoencephalitis. *Int J Dermatol* 2009;48:834–9.
2 Takeshima S, Shiga Y, Himeno T, *et al*. Clinical, epidemiological and etiological studies of adult aseptic meningitis: report of 11 cases with varicella zoster virus meningitis. *Rinsho Shinkeigaku* 2017;57:492–8.
3 Shukla B, Aguilera EA, Salazar L, *et al*. Aseptic meningitis in adults and children: diagnostic and management challenges. *J Clin Virol* 2017;94:110–4.
4 Fadhel M, Campbell N, Patel S, *et al*. Varicella zoster meningitis with hypoglycorrhachia on cerebrospinal fluid (CSF) analysis in a young immunocompetent host without a rash. *Am J Case Rep* 2019;20:701–4.
5 Harada T, Watari T, Miyagami T, *et al*. COVID blindness: delayed diagnosis of aseptic meningitis in the COVID-19 era. *Eur J Case Rep Intern Med* 2020;7:001940.