

Palatal mucormycosis in a patient with SARS-CoV-2 infection

Adith Venugopal MS PhD, Anand Marya BDS MScD

■ Cite as: *CMAJ* 2021 August 16;193:E1254. doi: 10.1503/cmaj.211026

A 53-year-old woman presented to the emergency department with a painful lesion on her hard palate and a history of poorly controlled type 2 diabetes mellitus. One month prior, she had tested positive for SARS-CoV-2, but was asymptomatic and did not require treatment. Eight days after testing positive, she developed a painless lesion on her palate. Two weeks later, the patient noticed an increase in the lesion's size and she began to experience severe pain that radiated across her palate, midface and jaw, with putrid halitosis. She presented to our hospital 22 days after the lesion appeared.

At presentation, the patient's fasting blood glucose level was 9.7 (normal range 5.6 to 6.9) mmol/L. We noted a deep ulcerated lesion on the hard palate (Figure 1). Histopathology showed large nonseptate hyphae with thin walls and branches (Appendix 1, available at www.cmaj.ca/lookup/doi/10.1503/cmaj.211026/tab-related-content). *Rhizopus microsporum* was identified in cultures, and we diagnosed mucormycosis. Our team surgically débrided the patient's lesion and prescribed liposomal amphotericin B 1 mg/kg/d dose for 6 weeks. We also treated her diabetes with insulin. Six weeks later, the lesion had resolved and she was asymptomatic.

Mucormycosis is caused by the saprophytic aerobic fungi *Rhizopus*, *Rhizomucor* and *Cunninghamella* of the order *Mucorales*.¹ Disease transmission occurs mainly via inhalation of spores or direct inoculation onto damaged skin or mucosa from environmental sources such as soil and animal faeces. Mucormycosis can present as rhinocerebral, pulmonary, cutaneous, gastrointestinal or disseminated disease and may be lethal. Tissue necrosis is a characteristic feature, caused by angioinvasion and vascular thrombosis.² First-line treatment is surgical débridement and liposomal amphotericin B.¹

Mucormycosis usually presents in immunocompromised patients with poorly controlled diabetes, prolonged steroid use, HIV infection, malignant disease or renal failure.² A study of 101 patients with COVID-19 and mucormycosis, most of whom were in India, found that 80% of patients had diabetes mellitus and 76% had taken corticosteroids for SARS-CoV-2 infection.³ Clinicians should consider mucormycosis in patients with SARS-CoV-2 infection who have tissue necrosis, especially in patients with comorbid diabetes mellitus or those who have recently taken corticosteroids.

References

1. Cornely OA, Alastruey-Izquierdo A, Arenz D, et al.; Mucormycosis ECMM MSG Global Guideline Writing Group. Global guideline for the diagnosis and management of mucormycosis: an initiative of the European Confederation of Medical Mycology in cooperation with the Mycoses Study Group Education and Research Consortium. *Lancet Infect Dis* 2019;19:e405-21.
2. Corzo-León DE, Chora-Hernández LD, Rodríguez-Zulueta AP, et al. Diabetes mellitus as the major risk factor for mucormycosis in Mexico: epidemiology, diagnosis, and outcomes of reported cases. *Med Mycol* 2018;56:29-43.
3. Singh AK, Singh R, Joshi SR, et al. Mucormycosis in COVID-19: a systematic review of cases reported worldwide and in India. *Diabetes Metab Syndr* 2021;15:102146.

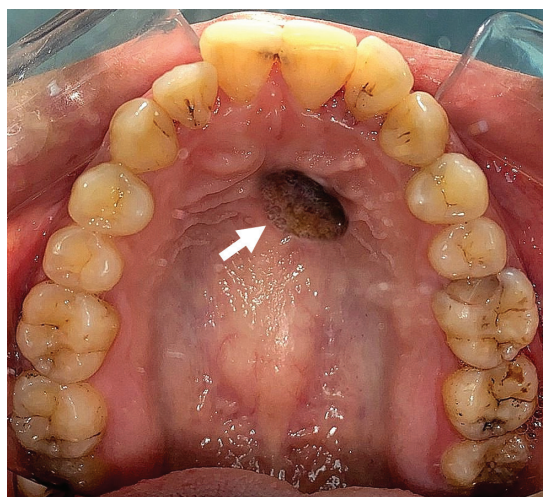


Figure 1: Photograph showing a punched-out, deep, ulcerated lesion measuring 3 × 2.5 × 0.5 cm on the median aspect of the hard palate of a 53-year-old woman. The lesion extended from the first to the fourth palatal rugae, exposing bone, with lobulated and swollen borders and blackish slough within (arrow).

Competing interests: None declared.

This article has been peer reviewed.

The authors have obtained patient consent.

Affiliations: Department of Orthodontics (Venugopal), Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai, India; Department of Orthodontics (Venugopal, Marya), University of Puthisastra, Phnom Penh, Cambodia

Content licence: This is an Open Access article distributed in accordance with the terms of the Creative Commons Attribution (CC BY-NC-ND 4.0) licence, which permits use, distribution and reproduction in any medium, provided that the original publication is properly cited, the use is noncommercial (i.e., research or educational use), and no modifications or adaptations are made. See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>

Correspondence to: Adith Venugopal, adithvenugopal@saveetha.com; avenugopal@puthisastra.edu.kh