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## Visual Case Discussion

## Oral aphthous ulcers associated with COVID-19

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## ARTICLE INFO

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## 1. Discussion

A 45-year-old woman with no significant past medical history presents to the emergency department complaining of 5 days of odynophagia and fatigue. She has been able to swallow food and saliva with discomfort. She has not had any change in taste or smell. She has not had a cough, fever, or shortness of breath. She has noted myalgias for one day.

On physical examination her vital signs are normal. She appears uncomfortable but in no distress. Eyes are anicteric. Mucous membranes are moist. She has multiple aphthous ulcers on her palate (see Fig. 1). There is mild pharyngitis. Uvula is mildly edematous and erythematous, yet midline. No tonsillar exudates are noted. There is no significant cervical lymphadenopathy. Her lungs were clear, and the rest of her exam is unremarkable. Polymerase chain reaction testing confirms the diagnosis of coronavirus disease 2019 (COVID-19).

Aphthous ulcers are a common oral disease that present as shallow, round lesions with a pseudomembrane and an erythematous border.<sup>1</sup> Population based studies suggest an incidence rate of 1.5%.<sup>2</sup> The cause is thought to be multifactorial and related to mucosal injury through immune mediated response.<sup>3</sup> While aphthous ulcers can result from emotional stress, they may also present in systemic diseases such as Behcet's disease, HIV infection, and agranulocytosis.<sup>1</sup> Aphthous ulcers have recently been described as an oral manifestation of COVID-19 infection. A retrospective study indicated 1.7% of patients with COVID-19 also complained of intra-oral pain related to aphthous stomatitis.<sup>4</sup> These lesions tend to occur in younger patients with mild symptoms concurrent or slightly preceding systemic manifestations.<sup>5</sup> Aphthous ulcers may be an early symptom of COVID-19 that could be

helpful for early diagnosis.<sup>5</sup>

## 2. Questions and answers with a brief rationale true &amp; false and / or multiple-choice questions

## Question 1

Question Type multiple choice

Which of the following is not associated with aphthous ulcers?

Answer Options

- a) HIV infection
- b) Caustic ingestion
- c) Behcet's disease
- d) COVID-19
- e) Agranulocytosis

Correct Answer = B

While caustic ingestions can cause mucosal and more extensive injuries, they are not related to aphthous ulcers.

## Question 2

Question Type multiple choice

Which of the following patient populations are more likely to develop aphthous ulcers associated with COVID-19?

Answer Options

- a) Patients experiencing long COVID-19
- b) Elderly patients
- c) Patients with severe COVID-19
- d) Younger patients

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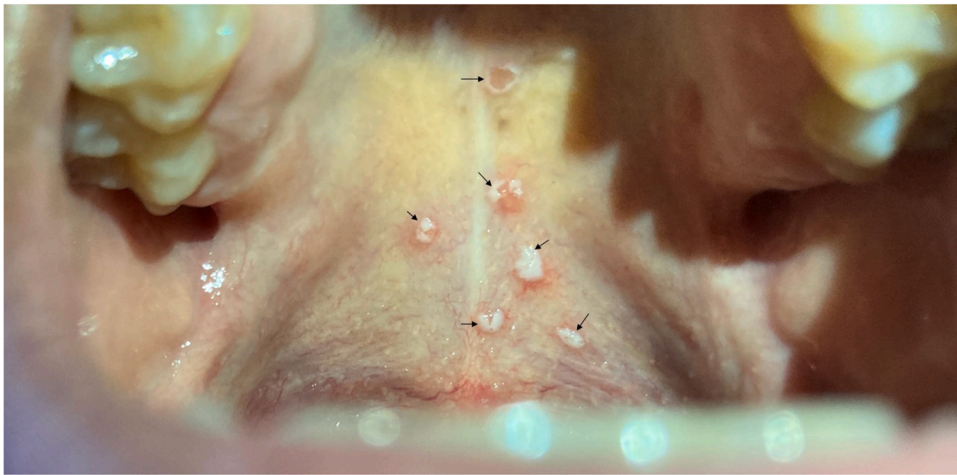


Fig. 1. Picture of patient's mouth with multiple aphthous ulcers on the palate indicated by arrows.

e) Patients with diabetes

Correct Answer = D

Aphthous ulcers associated with COVID-19 tend to occur in younger patients with mild symptoms concurrent or slightly preceding systemic manifestations.

#### Declaration of Competing Interest

Submitted as PDF file.

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