

# Friable Erythema and Erosions on the Mouth

Ryan Karmouta, MD, MBA; Anar Mikailov, MD



A 68-year-old man with squamous cell carcinoma of the tongue presented with a sore throat and odynophagia of 4 days' duration. At the time he was undergoing radiation therapy for the squamous cell carcinoma, and multiple myeloma was being actively treated with carfilzomib and pomalidomide. At the time of symptom onset he also was undergoing treatment with levofloxacin for community-acquired pneumonia. On day 2 of antibiotic therapy he noted pain with swallowing and an intolerance to warm foods. He was unaware of any new rash or lesions of the lips or mouth. He denied dysgeusia, changes in speech, bleeding, trauma, or recent smoking. He was taking prophylactic acyclovir and trimethoprim-sulfamethoxazole due to chemotherapy. Physical examination revealed a posterior oropharynx and uvula with well-defined friable erythema and erosions covered by white patches. There was no mucosal ulceration and no notable skin findings. The remainder of the physical examination was unremarkable.

## WHAT'S THE DIAGNOSIS?

- a. candida esophagitis
- b. fixed drug eruption
- c. herpetic gingivostomatitis
- d. radiation mucositis
- e. recurrent aphthous stomatitis

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Dr. Karmouta is from Harvard Medical School, Boston, Massachusetts. Dr. Mikailov is from Beth Israel Deaconess Medical Center, Department of Dermatology, Boston.

The authors report no conflict of interest.

Correspondence: Ryan Karmouta, MD, MBA, Harvard Medical School, 25 Shattuck St, Boston, MA 02215 (ryankarmouta@gmail.com).

## THE DIAGNOSIS:

# Radiation Mucositis

The patient was undergoing active radiation therapy for squamous cell carcinoma of the tongue, and according to the oncology team, the findings were in the precise location of radiation exposure. Radiation mucositis is a major and limiting side effect of radiation therapy for head and neck mucosal cancers, and symptom management is critical to ensure completion of the full radiation dose. Although infectious etiologies must be considered, the patient was already on prophylactic antiviral and antibacterial therapies. Moreover, the focal involvement with sparing of more mucosal tissue is atypical for most infections. Fixed drug reactions can present with localized mucosal and nonmucosal inflammation leading to erosion or ulceration. In this case, the only potential culprit was levofloxacin; however, it was initiated 2 days prior, and the patient never had reactions to this medication in the past.

Acute radiation mucositis is a transient but major limiting side effect of radiation therapy. The associated odynophagia, secondary infection, and reduced oral intake often can lead to diminished disease control secondary to treatment interruption and subsequent development of resistant tumor burden. Concurrent chemotherapy and alternated fractionation radiation therapy increase the incidence of mucositis. Trotti et al<sup>1</sup> (n=6181) reported that severe mucositis (grades 3 to 4) was found in 56% of patients receiving altered fractionation radiation therapy compared to 34% of patients who received conventional radiation therapy. Other risk factors related to the development of acute radiation mucositis include associated chemotherapy, age (>65 years), poor oral hygiene, diabetes mellitus, and prior periodontal disease.<sup>2</sup>

Radiation causes direct cellular damage to keratinocytes, leading to ulceration and erythema, as well as keratinocyte stem cells, which interferes with the healing process. Typical symptoms of mucosal radiation injury may include erythema (asymptomatic or causing intolerance of warm foods) that develops at the end of the second week of radiation therapy, focal areas of desquamation that develops in week 3, and confluent mucositis that can further progress to ulceration and necrosis in weeks 4 to 5.<sup>2</sup> The development of dysgeusia, which is estimated to occur in 67% of patients receiving radiotherapy and 76% of patients receiving combination therapy, also can contribute to nutritional difficulties and weight loss.<sup>3</sup>

Avoiding overtreatment by constraining radiation volume and limiting concurrent chemotherapy are important preventative measures. The mainstay for managing mucositis includes symptomatic relief with oral hygiene, topical agents, topical plus systemic analgesia, dietary changes, and treatment of associated infections. Benzydamine, a nonsteroidal anti-inflammatory drug, is not available in the United States but has been shown to effectively improve symptoms.<sup>4</sup> Various formulations of topical anesthetics consisting of diphenhydramine with or without corticosteroids, antibiotics, and antifungals help alleviate symptoms of mucositis; however, no single formulation has been studied. Low-level laser therapy also has shown efficacy in managing symptoms of mucositis.<sup>5,6</sup> For persistent odynophagia, systemic opioid therapy should be attempted to achieve uninterrupted radiation therapy. Severe mucositis requires balancing risks and benefits of interrupting treatment, as additional damage may cause permanent mucosal injury.

Our patient had adequate symptom control with benzocaine lozenges and a combination mouthwash containing diphenhydramine, nystatin, lidocaine, hydrocortisone, and tetracycline. He required only occasional doses of systemic oxycodone. After a 1-week hospital admission for treatment of the pneumonia, he resumed radiation therapy and completed a full 8-week radiation course.

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