

Management of stomatitis

Christopher P. O'Brien MD CCFP FCFP

Mary, a full-time nurse, is 52 years old and married with 3 children. She is a 34-pack-year smoker. Her medical history includes hypertension, hyperlipidemia, and chronic neck pain due to cervical neuropathy. She uses 12.5 mg of hydrochlorothiazide, 10 mg of ramipril, 20 mg of atorvastatin, and 81 mg of acetylsalicylic acid, all taken once daily. She also takes 50 mg of amitriptyline once daily at bedtime.

Mary presents with complaints of a sore throat, neck pain, and halitosis. The initial examination reveals a suspicious-looking ulcer on her right tonsil and right anterior cervical adenopathy. You advise antiseptic oral rinses and tincture of time, with a follow-up in 10 to 14 days.

When Mary returns, the ulcer has not improved and might have increased in size. You inform her that this ulcer might be cancer and refer her to an otolaryngologist. Investigations including a computed tomographic scan of the neck and biopsy of the tonsillar lesion proceed, and she is diagnosed with a poorly differentiated squamous cell carcinoma of the right tonsil, with ipsilateral anterior cervical node involvement (T2N2M0). She is then referred to your medical and radiation oncology colleagues for assessment. The decided treatment plan is cis-platinum chemotherapy and 35 fractions of intensity-modulated radiation therapy to head and neck, concurrently.

Mary returns to you and is quite emotional about the diagnosis. You address her many questions and concerns in a very supportive manner and assure her you will follow her on this journey. Many of her concerns surround possible side effects of the treatment. You discuss these side effects (eg, alopecia, anorexia, nausea and vomiting) and the potential repercussions of an immune-compromised state, but you focus on oral complications, given the statistical likelihood of these occurring in her case.

Oral side effects of cancer therapy are very common, and unfortunately most patients who receive head and neck radiation therapy develop oral complications.^{1,2} This is particularly true of patients receiving radiation and chemotherapy, as the combination compounds the risk.^{1,2}

Mucositis is painful inflammation or ulceration of the mucous membranes anywhere along the gastrointestinal tract. Stomatitis (oral mucositis) refers to inflammation and ulceration that occur in the mouth.

Stomatitis can affect any of the structures in the mouth: cheeks, gums, tongue, throat, lips, and roof or floor.²

Boxes 1 and 2 explain the causes of and medications commonly associated with stomatitis. Radiotherapy to the mouth results in substantial local oral mucosal damage in both acute and late stages. Radiation-induced stomatitis is characterized by xerostomia (dry mouth due to lack of

saliva), diffuse erythema, ulceration, taste alteration, oral soreness, dysphagia, difficulty talking, and mouth odour.³

The treatment options for stomatitis are the same whether the patient is palliative or curative. Subtle variations depend on prognosis and life expectancy.

Oral assessment

You use a proactive approach to minimize the complications of Mary's pending head and neck radiotherapy and concurrent chemotherapy. The oncology team refers her for dental screening, as the evidence supports this.³ You time this dental care to allow a sufficient recovery period before her cancer treatment is initiated. Mary returns and reports that her dental work included a cleaning, 2 minor fillings, and 1 extraction. You counsel her on a healthy lifestyle, prescription and over-the-counter medications, and the effects of these medications on the health of her mouth.

Many of the side effects of cancer therapy can often be prevented. The recommended approach supported by the evidence uses pretreatment oral assessment² to identify and eliminate asymptomatic oral infections, including minor dental caries, periodontal disease, and oral infections due to prosthesis or restorations, which might irritate oral mucosa. The oral assessment should be at least 2 weeks, but preferably 3 weeks, before cancer therapy begins to allow time to address any concerns.³

Box 1. Causes of stomatitis

- Chemotherapy
- Radiotherapy
- Loose-fitting dental prosthetics
- Trauma
- Poor dental hygiene
- Smoking
- Hematologic malignancies (stomatitis develops at 2 to 3 times the rate of solid tumours)
- Infection (viral, fungal, and bacterial)
- Dehydration
- Medications
- Alcohol

Box 2. Medications associated with stomatitis

- Chemotherapy
- Antihypertensives
- Opioids
- Antibiotics (indirect)
- Diuretics (increase risk of dehydration in compromised state)
- Anticholinergics
- Antihistamines and decongestants
- Steroids
- Antidepressants

Preventive approach and therapy

You instruct Mary about general mouth care and explain the likelihood of xerostomia. You advise her to stop using hydrochlorothiazide and suggest that she monitor her blood pressure in case another medication is needed. You also suggest that she wean herself from amitriptyline. You counsel her on smoking cessation and offer aids to assist her. You inform her of the risks of using alcohol during therapy and strongly discourage even occasional social use.

Xerostomia is the most consistent and bothersome side effect of radiotherapy.² Radiotherapy affects the serous glands, resulting in decreased salivary flow and dry mouth. Onset can be evident within 1 week of radiotherapy initiation and can have long-term repercussions. Xerostomia and the direct effect of radiotherapy and chemotherapy can lead to mucositis, initially erythema and edema of the epithelium, which might advance to ulceration. This process often starts within 2 weeks of radiotherapy and within 5 to 8 days of chemotherapy.² Although xerostomia and taste alteration can last for prolonged periods (ie, months), the mucositis will usually settle about 2 to 3 weeks after completion of radiotherapy or chemotherapy.

While practising a preventive approach to reduce the likelihood or severity of xerostomia, you still need to educate patients on current treatment strategies. These include use of saliva substitutes (eg, water or glycerin preparations) or salivary stimulants (eg, sialogogues or gum).

Box 3⁴ provides a stepwise approach to stomatitis-associated symptoms. Commonly used mouthwashes used for prevention and treatment of stomatitis include club soda, alcohol-free mouthwashes, and benzydamine hydrochloride; hydrogen peroxide is *not* indicated. Many pharmacies have their own formulary mouthwashes for stomatitis—often referred to as “magic mouthwash,” even though there is no magic. These mouthwashes, which can be very effective for sore mouth due to stomatitis, include various combinations of antifungals, antibacterials, steroids, and local anesthetics. It is important to encourage patients to hydrate frequently and educate them on other recommendations for general mouth care.

Box 3. Stepwise approach to symptoms of stomatitis

- Coating agents such as bismuth salicylate, sucralfate, or other antacids
- Water-soluble lubricants for mouth and lips
- Topical analgesics, such as benzydamine hydrochloride
- Topical anesthetics, such as lidocaine viscous (might impair gag reflex for a short period)
- Oral or parenteral analgesics, including opioids if needed, for pain not controlled with above

Data from Cancer Care Nova Scotia.⁴

You see Mary about 6 weeks into her treatment. She complains of a very sore mouth, with white plaques over her palate and tongue; these lesions are quite friable. She has lost substantial weight and has had to have an intravenous fluid bolus on a couple of occasions over the course


BOTTOM LINE

- Most patients who receive head and neck radiation therapy will develop oral complications.
- A proactive approach using pretreatment oral assessment will help minimize such complications.
- Review patients' medications and consider eliminating those that increase the risk of stomatitis.
- Xerostomia is the most consistent and bothersome side effect of radiation therapy. A preventive approach and early treatment are important.
- Proper nutrition and hydration are vital.

POINTS SAILLANTS

- La majorité des patients qui reçoivent une radiothérapie de la tête et du cou développeront des complications buccales.
- Pour minimiser de telles complications, il importe d'adopter une approche proactive et de faire une évaluation buccale avant le traitement.
- Il faut examiner les médicaments que prend le patient et envisager d'éliminer ceux qui augmentent le risque de stomatite.
- La xérostomie est l'effet secondaire déplaisant le plus fréquent de la radiothérapie. Il est important de faire de la prévention et de la traiter sans tarder.
- Il est essentiel que le patient s'alimente et s'hydrate bien.

of her treatment. She has complied with the preventive measures and did quit smoking. Your impression is oral candidiasis and you recommend that she use 100 mg of fluconazole daily for 10 days. Fluconazole for treatment of oropharyngeal candidiasis might be more effective than the usual regimen of nystatin, especially in the immune-compromised host.¹ You also counsel her about her anorexia and weight loss, suggesting high-calorie, high-protein oral supplements and referring her to a dietitian.

Mary is very optimistic, as she has only 1 week of therapy remaining and can see the light at the end of the tunnel. You offer her words of support and encourage her to follow up with you at the end of her treatment for ongoing care. Mary understands from talking with her oncologist that there is a potential to achieve a cure; you support this and share in her hope. 

Dr O'Brien is a family physician, Medical Director of Palliative Care Services at Atlantic Health Sciences Corporation, and a Lecturer in the Department of Family Medicine at Dalhousie University in Saint John, NB.

Competing interests

None declared

References

1. Ventafridda V, Ripamonti C, Sbanotto A, de Conno F. Mouth care. In: Doyle D, Hanks G, Cherny NI, Calman K, editors. *Oxford textbook of palliative medicine*. 3rd ed. New York, NY: Oxford University Press; 2005. p. 677-87.
2. Sonis ST, Costa JW. Oral complications. In: Kufe DW, Pollock RE, Weichselbaum RR, Gansler TS, Bast RC, editors. *Holland-Frei cancer medicine*. 6th ed. Hamilton, ON: BC Decker Inc; 2003. p. 1585-2598.
3. Stevenson-Moore P, Epstein JB. The management of teeth in irradiated sites. *Eur J Cancer B Oral Oncol* 1993;29B(1):39-43.
4. Cancer Care Nova Scotia. Palliative care front-line education program [education sessions 2007]. Halifax, NS: Cancer Care Nova Scotia; 2009. Available from: www.cancercare.ns.ca/en/home/healthprofessionals/education/excellence/palliativecare.aspx. Accessed 2009 Aug 12.