

Making sense of mouth ulceration: ulceration of local cause

Crispian Scully¹

Ulceration of local cause

Most oral ulcers/erosions are due to local causes, such as trauma or burns, and few of those affected attend a dental professional for advice. Ulceration of local cause includes trauma, burns, mucositis and local lesions.

Trauma

- Abuse
- Accidents
- Anaesthesia (after local anaesthesia, or neurological)
- Assaults
- Bites (Figure 1)
- Cunnilingus
- Falls
- Fellatio
- Self-harm (factitious).

In children, ulcers are often caused by accidental biting, follow dental treatment or other trauma, or from hard foods or appliances (Figure 2).

In child abuse (non-accidental injury), ulceration of the upper labial fraenum may follow a traumatic fraenal tear. Bruised and swollen lips, and even subluxed teeth or fractured mandible, can be other features of child abuse.

The lingual fraenum may be traumatised by repeated rubbing over the lower incisor teeth in children with recurrent bouts of coughing, as in whooping cough or in self-harm and self-mutilating conditions.

Trauma can produce ulceration in adults. Ulcers can be induced by a sharp tooth, restoration or appliance. Ulceration from the flange of a denture or other appliance is common – the close location and time relationship to appliance wearing is usually obvious (Figures 3a and 3b).

Chronic trauma may produce an ulcer with a keratotic or hyperplastic margin. If the lesion is suspicious, it should be observed for two weeks after the suspected irritant factor is removed and, if not resolved, should be biopsied.

Far less obvious is ulceration of the lingual fraenum if damaged in cunnilingus, or the palate in fellatio.

At any age there may be ulceration where there is pain-insensitivity (congenital or acquired – especially after a local anaesthetic), or in mental health disorders there may be factitious ulceration, especially of the maxillary gingivae.

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Figure 1: Ulceration related to trauma.

Burns

- Chemicals
- Thermal
- Radiation.

At any age there may be ulceration caused by local burns with chemicals of various kinds, thermal injury (hot or cold), or radiation damage (laser, light or ionising radiation) – and also after cytotoxic chemotherapy or after graft-versus-host disease – a systemic reaction mainly seen after bone marrow transplantation (then termed mucositis).

Chemicals that have been implicated in ulceration include:

- Bleach, especially hypochlorite
- Choline salicylate
- Denture cleansers
- Formalin
- Liquid nitrogen
- Medication burns (eg, ferrous sulphate)
- Mouthwash overuse
- Peroxides
- Phosphoric acid
- Sulphuric acid
- Root canal medicaments.

Burns are characterised by mild to moderate tissue damage and often heal spontaneously within seven to 10 days, usually without scarring.

Mucositis

Radiation-induced mucositis is common and invariable within the radiated field of mucosa. Chemotherapy mucositis will be discussed later in this series.

Mucositis can lead to a number of problems, including ulceration and can be lethal by acting as a portal for septicaemia, especially streptococcal.

Risk factors for radiation mucositis are mainly the radiation dose and type of fractionation but may also include:

- Alcohol



Figure 2: Ulceration related to orthodontic appliance.

- Concurrent chemotherapy
- Dental disease
- Poor oral hygiene
- Younger age.

Radiation mucositis can be reduced by using:

- New radiation techniques
- Minimal radiation doses and field
- Mucosa-sparing blocks
- Amifostine before therapy
- No chemotherapy
- Betamethasone mouthwashes.

Treatment includes avoiding irritants (smoking, spirits or spicy foods), good oral hygiene, as well as analgesics:

- Topically prior to meals
 - 1.5% benzydamine hydrochloride spray or mouthwash
 - 2% lidocaine (lignocaine) mouthwash
 - Aspirin as a mouthwash
- Systemically
 - Opioids, such as morphine, buprenorphine or hydromorphone.

Local lesions

Necrotising sialometaplasia

Necrotising sialometaplasia (NSM) is a rare condition of ulceration, often in the palate, which heals spontaneously over several weeks. Usually seen in smokers, it is associated with salivary gland infarction.

Since the clinical features may mimic squamous cell carcinoma, biopsy is indicated if the ulcer persists for more than three weeks; this may have an appearance resembling neoplasia (pseudoeplitheliomatous hyperplasia). There is infarction, metaplasia, and the lesion is negative for p53, but positive for Ki-67, CK7 and p63 (4A4), and calponin negative myoepithelial cells. If it fails spontaneously to resolve, treatment with surgery may be necessary.



Figures 3a and 3b: Denture-induced ulceration and hyperplasia.

Traumatic ulcerative granuloma with stromal eosinophilia (TUGSE)

TUGSE is not related to eosinophilic granuloma of bone as in Langerhans cell histiocytosis.

A reactive condition probably due to trauma, TUGSE typically presents as a deep, rolled bordered and indurated ulcer or can be exophytic and lobular (like a pyogenic granuloma) but usually resolves spontaneously slowly over many weeks, although it may recur.

Seen most commonly on the dorsal and lateral tongue, followed by lips and buccal mucosa, it may affect patients of all ages, including neonates (Riga-Fede disease).

Since the clinical features may mimic squamous cell carcinoma, biopsy is indicated if the ulcer persists for more than three weeks; this shows eosinophils in areas of muscle damage. Treat with surgery, and intralesional corticosteroids if it recurs.

References

- Gandolfo S, Scully C, Carrozzo M (2006) Oral medicine. Elsevier Churchill Livingstone (Edinburgh and London). ISBN 13: 29780443100376
- Scully C, Almeida ODP, Bagan J, Diz PD, Mosqueda A (2010) Oral medicine and pathology at a glance. Wiley-Blackwell (Oxford) ISBN 978-1-4051-9985-8
- Scully C, Flint S, Bagan JV, Porter SR, Moos K (2010) Oral and maxillofacial diseases. Informa Healthcare (London and

New York). ISBN-13: 9780415414944

Scully C, Bagan JV, Carrozzo M, Flaitz C, Gandolfo S (2012) Pocketbook of oral disease. Elsevier, London. ISBN 978-0-702-04649-0

Scully C (2013) Oral and maxillofacial medicine. 3rd edition. Churchill Livingstone (Edinburgh). ISBN 9780702049484

Scully C (2012) Aide memoires in oral diagnosis: mnemonics and acronyms (the Scully system). Journal of Investigative and Clinical Dentistry 3(4): 262-3

Scully C (2013) RULE for cancer diagnosis. British Dental Journal 215: 265-6

Disclosure

This series offers a brief synopsis of the diagnosis and management of mouth ulceration – a complex topic that includes common disorders, and less common but life-threatening conditions. It does not purport to be comprehensive, and the series may include some illustrations from books written or co-authored by the author and colleagues from UK and overseas, published by Elsevier-Churchill Livingstone, Wiley-Blackwell, or Informa/Taylor & Francis – all of whose cooperation is acknowledged and appreciated.

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