# Making sense of mouth ulceration: part two

Crispian Scully[1]

## Blood and blood vessel disorders

The clinical appearance of an oral ulcer on its own is rarely diagnostic. In the light of multiple causes, some systematic way of dealing with ulceration is needed, such as my system of splitting the causes into:

- Systemic
- Malignancy
- Local
- Aphthae
- Drugs.

This article discusses the first of the systemic causes – blood or blood vessel disorders.

The main disorders of blood or blood vessels that may present with mouth ulceration include:

- Anaemias
- Leukaemias and myelodysplastic syndromes
- Lymphomas
- Neutropenias
- Vasculitides.

### Anaemia

Anaemia underlies a small minority of people who suffer recurrent ulceration; usually these are due to a haematinic deficiency of iron, folate or vitamin B12.

Diagnosis is usually from a blood test; treatment is attention to the underlying cause and replacement of the missing factor. In some, the ulcers may abate.

### Leukaemia

Leukaemia is a malignant proliferation of leucocytes, which presents with:

- Lymphadenopathy (and enlarged liver/spleen)
- Effects from bone marrow malignant proliferation of leucocytes:
  - Anaemia
  - Thrombocytopenia
  - Infections.

Common oral manifestations may include:

- Lymphadenopathy
- Bleeding and petechiae
- Gingival swelling (Figure 1)
- Ulceration (Figure 2)
- Others:
  - Sensory changes (particularly of lower lip)
  - Extrusion of teeth
  - Painful swellings over mandible
  - Parotid swelling (Mikulicz syndrome)
  - Infections: fungal and herpes virus lesions.

Diagnosis is from:

- Blood film
- White cell count (raised)
- Differential count (shows blasts)
- Platelet count (reduced)
- Bone marrow biopsy.

Treatment is mainly by chemotherapy. Mouth care is important:

- Oral hygiene should be maintained (using chlorhexidine mouth rinses and a soft toothbrush)
- Prophylactic antifungal and antiviral therapy
- Use oral cooling to reduce ulceration caused by chemotherapeutic agents. Methotrexate ulceration may be prevented or ameliorated by intravenous folinic acid ('leucovorin rescue') or topical folinic acid.

### Lymphomas

Lymphomas are malignant tumours that originate in lymph

[1] *Professor Crispian Scully CBE FMedSci DSc FDS MD is professor emeritus at UCL,London, King James IV professor at the Royal College of Surgeons, Edinburgh, Harley Street Diagnostic Centre, 16 Devonshire Street and 19 Wimpole Street, London.*

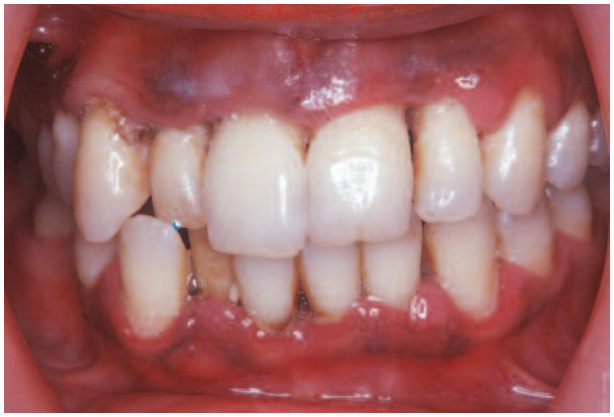

*Figure 1: Leukaemia with gingival ulcers and swelling*

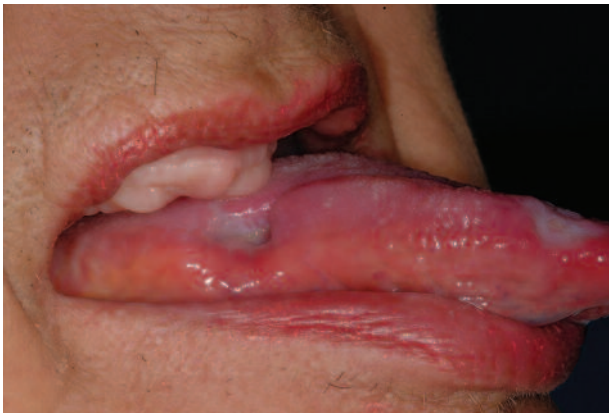

*Figure 2: Ulceration in leukaemia*

nodes and lymphoid tissue. They are classified as Hodgkin's disease, non-Hodgkin's lymphoma (NHL) or Burkitt's lymphoma (seen mainly in Africa) (see Table one).

Lymphomas are:

- Diagnosed by a full blood picture and bone marrow biopsy
- Treated mainly by chemotherapy
- Managed by improving oral hygiene, therefore mouth care is important. Use antimicrobials as necessary.

## Neutropenia

Neutropenia is where there is deficient polymorphonuclear neutrophilic leucocytes – the main protection against bacteria. Patients with defective neutrophils suffer much the same problems as those with immune defects – susceptibility to respiratory and mucocutaneous infections. Neutropenia may result from viral infections (especially HIV), drugs, irradiation, or can be idiopathic.

Neutropenia can cause:

- Persistent ulcers lacking an inflammatory halo (Figure 3)
- Bleeding tendency
- Lymphadenopathy
- Infections.

Diagnosis is by a full blood picture and bone marrow biopsy. Oral management is by improving oral hygiene, and by using antimicrobials as necessary.

## Vasculitides

Vasculitides are conditions where there is blood vessel inflammation (vasculitis). They include giant cell arteritis, anti-neutrophil cytoplasmic antibody-associated vasculitides, and lupus erythematosus (LE).

Giant cell arteritis typically causes pain in the temple, tongue or masticatory muscles – rarely necrosis and ulceration of lip or tongue. As the retina may also be damaged, systemic steroids are indicated as an emergency.

**Table 1:** Lymphomas key facts

| **Hodgkin's disease:** |
|---|
| • Particularly affects middle-aged males, with progressive lymphoid tissue involvement<br>• Often begins with enlarged, discrete and rubbery neck lymph nodes<br>• Drinking alcohol may cause pain in lymph nodes<br>• Symptoms include pain, fever, night sweats, weight loss, malaise, bone pain and pruritus<br>• Treatment by chemotherapy and radiotherapy is remarkably successful. |
| **Non-Hodgkin's lymphoma:** |
| • Is more common than Hodgkin's disease<br>• Has poorer prognosis<br>• Affects the gastrointestinal tract and central nervous system<br>• Enlargement of cervical lymph nodes is often a symptom<br>• Often affects the gingivae or faucial region<br>• Is a recognised complication of HIV/AIDS<br>• May be Epstein-Barr virus (EBV) related. |

Vasculitis associated with the anti-neutrophil cytoplasmic antibody (ANCA) affects small- to medium-sized blood vessels, causing chronic inflammatory diseases with widespread manifestations. The most common is granulomatosis with polyangiitis (formerly known as Wegener's granulomatosis). Features affect ear, nose, throat, lungs and kidneys, while oral features may include gingival swelling (strawberry gingivitis), mouth ulcers as well as underlying bone destruction.

Diagnosis includes positive ANCA test, confirmed by

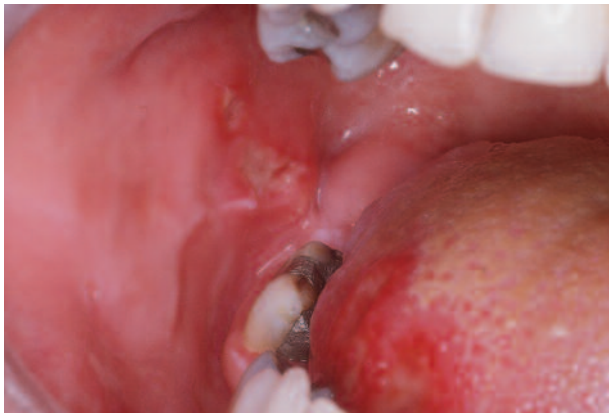

***Figure 3: Neutropenic ulcers***

biopsies from sites of active disease. Therapy for a localised disease is co-trimoxazole, while for organ-threatening disease is prednisolone plus cyclophosphamide or rituximab.

There are two types of lupus erythematosus:

- Chronic discoid lupus erythematosus (DLE)
- Systemic lupus erythematosus (SLE).

DLE has:

- No involvement of internal organs
- Erythematous rashes
- Mucocutaneous white/red patches with ulcers
- White patches with central ulceration.

SLE is a systemic vasculitis that is more widespread than DLE. Lesions may be:

- Gastrointestinal
- Haematological
- Mucocutaneous
- Musculoskeletal
- Neuropsychiatric
- Ocular
- Pulmonary
- Renal.

Mouth ulcers are similar to lichen planus but can be unilateral. Diagnosis is confirmed by auto-antibodies to DNA (anti-DNA) and extractable nuclear antigens (nuclear ribonucleoprotein [RNP], Sm, Ro, and La).

Treatment is with non-steroidal anti-inflammatory drugs, antimalarials, corticosteroids, and other immuno-suppressants or biologic agents.

## 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.

*Reprinted with permission by Private Dentistry February 2014*