10-MINUTE CONSULTATION

Aphthous ulcers

Erik W M A Bischoff, Annemarie Uijen, Mark van der Wel

A 25 year old man presents with oral ulcerations that cause him great discomfort. He explains that these ulcers recurred several times last year, but that the current presentation is far more painful. He asks for your advice on treatment and prevention of these burning sores.

What issues you should cover

Aphthous ulcers (aphthae or canker sores) are painful solitary or multiple erosions of the oral mucosal membrane. Aphthous ulcer is the most common condition of the oral mucosa in developed countries, affecting around 20% of the general population, mostly young adults. Diagnosis is based on history and examination (see box).

- Ask about the severity of symptoms, duration of healing, and frequency of recurrence. Minor aphthae (80-85%) often cause minimal symptoms. They heal spontaneously without scarring within one to two weeks and recur at

**Differentiation of aphthous ulcers from other oral diseases**

In acute necrotising ulcerative gingivitis (mixed bacterial infection), ulcerations are seen in combination with strong halitosis and gingivitis. Antibiotics are indicated. Infection with HIV causes large lesions that heal very slowly. Squamous cell carcinoma presents with a solitary persistent ulcer that lasts for more than two weeks. Biopsy of such a non-healing ulcer is definitely indicated to rule out intraoral neoplasia. Herpes stomatitis (herpes simplex virus) causes abundant small vesicles and ulcers, with fever and cervical lymphadenopathy, particularly in infants. The lesions last about 10 days. Herpangina (coxsackie virus infection) causes general malaise, fever, and cervical lymphadenopathy that lasts for only a few days.

**Patient consent not required (patient anonymised, dead, or hypothetical).**

**Provenance and peer review:** Commissioned; externally peer reviewed.

**Correspondence to:** e Bischoff

Centre, Nijmegen, Netherlands

Department of Primary and Community Care, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands

Cite this as: BMJ 2009;339:b2382
doi: 10.1136/bmj.b2382

This is part of a series of occasional articles on common problems in primary care. The BMJ welcomes contributions from GPs.
What you should do

• Inspect the oral cavity to determine size, number, and distribution of ulcerations. Typically, aphthous ulcers are round to ovoid with circumscribed margins, a yellow or white floor, and are surrounded by an erythematous halo. They are unlikely to affect the keratinised mucosa of the hard palate and the alveolar processes of the maxilla and mandible. Minor aphthae present as shallow single or multiple ulcers with a diameter <10 mm. Major aphthae are deeper ulcerations with a diameter ≥20 mm, and herpetiform aphthae are small, vesicular, 1-3 mm lesions that form clusters.

• Take the patient’s temperature and palpate for cervical lymph nodes. Fever and swollen lymph nodes are less common in aphthous ulcerations and could be indicative of other oral diseases.

• Skin abnormalities are not associated with aphthous ulceration. If present, they may be indicative of skin conditions affecting the oral mucosa, such as lichen planus (itchy lesions with Whickham’s striae), lupus erythematosus (butterfly rash), pemphigus vulgaris (blistering, potentially fatal), or benign pemphigoid.

• Ask about familial predisposition, oral hygiene, allergic reactions, local trauma, stress, menses, adverse drug events, and smoking status. These factors are associated with aphthae in only a minority of patients. The exact pathogenesis of aphthous ulcers is unclear.

• Recurrence of aphthous ulcerations is idiopathic in most patients. However, in a minority of patients, recurrent aphthae can be an oral manifestation of systemic diseases or deficiencies (box). Therefore, ask about genital ulcers and symptoms of uveitis (pain, blurry vision, light sensitivity, tearing, or redness of the eye) in Middle Eastern or South East Asian patients to exclude Behçet’s disease (vasculitis). Consider inflammatory bowel disease, such as coeliac disease and Crohn’s disease, in patients with a history of bloody or mucousy stools. In young children, recurrent aphthae can occur and resolve spontaneously in combination with periodic fever, pharyngitis, and cervical adenitis (that is, PFAPA syndrome). Ask about symptoms of fatigue, dizziness, shortness of breath on exertion, and palpitations, because haematinic deficiencies (iron, folic acid, or vitamin B12) are seen in up to 20% of patients with recurrent lesions.

• Perform blood tests (complete blood count with differential, mean cell volume, ferritin, folate, vitamin B12) when symptoms of haematinic deficiency are present.

• Refer the patient to a specialist if a systemic disease, skin disease, or malignancy is suspected.

• Explain to the patient that, in most people, the cause of aphthae is not known; that therefore prevention (besides good oral hygiene) is not possible; that aphthae are not thought to be infectious; that they will take about a month to heal; and that the main goal of treatment is symptom relief. In case of recurrence ask for past treatments and response.

• Although most aphthae heal spontaneously, they can be painful. Simple measures to maintain good oral hygiene are important for symptom relief. Use of topical antibiotics or antiseptics such as tetracycline mouthwash or 0.2% chlorhexidine mouthwash can hasten healing and prevent secondary bacterial infection. Analgesia can also be provided topically using 0.15% benzydamine hydrochloride mouthwash, lidocaine 5% ointment, or lidocaine 10% spray (use when required, from age 12 onwards). Topical corticosteroid pastes, mouthwashes, and sprays (such as triamcinolone 0.1% two to four times a day, betamethasone 500 µg mouthwash four times a day, or beclometasone 100 µg aerosol inhalation applied directly to the ulcers four times a day) also help to reduce symptoms and hasten healing. Ulcers resistant to topical treatment may require systemic agents such as corticosteroids, colchicines, azathioprine, or thalidomide. These treatments should be reserved for severe cases and prescribed by oral medicine specialists.

Funding: None.

Competing interests: None declared.

Provenance and peer review: Not commissioned; externally peer reviewed.

Patient consent obtained.

Accepted: 21 May 2008