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The painful mouth

Background

The painful mouth presents a diagnostic challenge to the general practitioner. Despite curriculum revision of most medical courses, oro-pharyngeal diseases are still inadequately covered.

Objective

This article aims to alert the GP to common causes of a painful mouth and provides a guide to diagnosis and management.

Discussion

Four case studies are presented to illustrate common problems presenting in general practice, and their optimal treatment.

■ Patients frequently present to their GPs with a painful mouth, which may be aggravated by intake of fluids, solids, chewing or cold air. A full history is mandatory as this may provide the diagnosis. In addition to standard questions, it is necessary to ascertain the site of pain, whether aggravated or precipitated by thermal change, movement or touch. General health, dermatological conditions, including exanthemata, connective tissue diseases, psychological disorders, recent change in medications or simply an alteration in wellbeing should be elicited. Bilateral oro-facial pain suggests a systemic or psychological basis whereas localised unilateral pain, a specific lesion.

Table 1. Common causes of a painful mouth

General
<ul style="list-style-type: none"> • Infective <ul style="list-style-type: none"> – viral: herpes stomatitis, cytomegalovirus, herpangina, Epstein-Barr virus (acute pharyngitis), HIV/AIDS, HPV – bacterial: gonorrhoea, syphilis, Vincent infection – fungal: candida albicans • Immunological induced <ul style="list-style-type: none"> – erythema multiforme/Stevens-Johnson syndrome – bullous conditions: pemphigus vulgaris, benign mucocutaneous pemphigoid, para-neoplastic pemphigus • Blood dyscrasias <ul style="list-style-type: none"> – acute leukaemia • Medications <ul style="list-style-type: none"> – cytotoxic therapy – adverse drug reactions – metformin • Dermatological <ul style="list-style-type: none"> – erosive lichen planus – systemic lupus erythematosus (SLE) – may be localised • Psychogenic • Nutritional
Local
<ul style="list-style-type: none"> • Pulpitis, periodontitis • Acute gingivitis • Mucosal ulceration: aphthous, traumatic, neoplastic, thermal, drug induced

Examination of the mouth and oro-pharynx is not always easy but failure to accurately diagnose the complaint can have dire consequences. A careful examination under adequate illumination must include the base of the tongue, floor of the mouth and oro-pharynx. Regional lymph nodes should be palpated.

Causes

Causes of a painful mouth are shown in *Table 1* and are often identifiable by direct observation. The most common cause of oro-facial pain is dental, and a dental cause must always be considered – the axiom ‘uncommon presentations of common conditions are more frequent than common presentations of uncommon diseases’ is pertinent.¹ A dental cause may be indicated by the relationship of the discomfort to thermal change, by inspection or percussion of the teeth. In general, patients are able to identify the quadrant where an affected tooth is located but due to multiple innervations of oral tissues, the diffuse nature of oro-facial pain and the frequency of referral of pain to the ear, localisation may be difficult.

A common precipitant of diffuse oral discomfort is a drug reaction. Other systemic causes include infections, nutritional or immunological disorders, dermatological or psychological conditions.²

Investigations are rarely necessary, but must be performed in doubtful cases (*Table 2*.) Any ulcer, swelling or other mucosal lesion that persists for more than 3 weeks where there is no cause elicited, should be biopsied.

Clinical presentations

The most common presentations are:

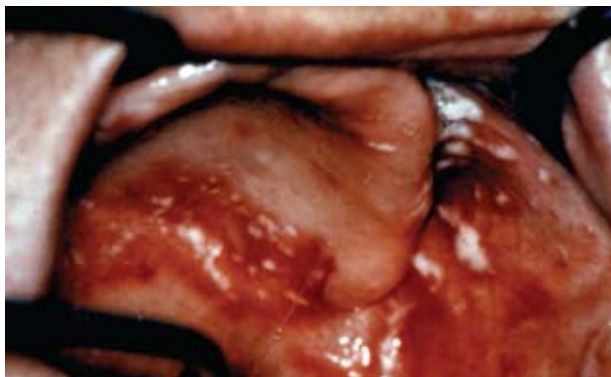
- diffuse erythema, sometimes with an overlying white membrane or linear markings. Here, one should suspect candidiasis (*Figure 1*) or a drug reaction if a new medication was recently commenced (see *Case study 1*)
- multiple discrete ulcerated or vesicular lesions. This presentation may be due to a viral infection (see *Case study 2*), an immunological disorder such as pemphigus vulgaris, or oral mucous membrane pemphigoid (see *Case study 3*). Microbiological testing or a tissue biopsy may secure the diagnosis. Aphthous ulcers are usually single but may occur in clusters. They are usually recurrent and have a distinct morphology being 3–5 mm in diameter, oval or round with a sloughing base and erythematous margin
- widespread inflamed gingivae. This problem is relatively common and is usually due to a bacterial infection in the presence of poor oral hygiene. It frequently resolves if oral hygiene is improved and chlorhexidine mouthwash is used
- sero-sanguinous exudates may form on skin and mucous membrane in erythema multiforme. Erythema multiforme presents as intra- and sub-epithelial vesicles that on the hands appear as target lesions. These vesicles rupture leaving painful ulcers. Swollen fissured lips and painful oral ulcers are frequently seen. Where the condition is widespread and severe – affecting the mouth, pharynx, genitals and eyes, it is known as Stevens-Johnson syndrome (*Figure 2*).

It is important to ascertain whether other organs are affected when a

Table 2. Investigations

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| <ul style="list-style-type: none"> • Swab for viral studies: culture, immunofluorescence, PCR <ul style="list-style-type: none"> – bacterial smear and culture – fungal smear and culture |
| <ul style="list-style-type: none"> • Tissue for: <ul style="list-style-type: none"> – histopathology – direct immunofluorescence if immune mediated disease suspected |
| <ul style="list-style-type: none"> • Blood for FBE, CRP |
| <ul style="list-style-type: none"> • Immunofluorescence for auto-antibodies |

Figure 1. Oral candidiasis



patient complains of a sore mouth. In mucous membrane pemphigoid, the conjunctiva is frequently injected and if the condition is untreated conjunctival scarring and tethering may occur. In Behcet syndrome,³ painful ulcers form on the genitals and mouth. Eye involvement is common, resulting in uveitis and other inflammatory eye conditions.

Case study 1

Mr JA, 50 years of age, was seen urgently as his mouth was so painful that he could not eat. He reported that 9 months previously he became lethargic and fatigued and experienced a dry mouth. He was found to be diabetic and commenced on metformin. Glibenclamide was later added and his blood sugars then stabilised. However, JA developed an erythematous painful oral mucosa and a metallic taste. A mucosal swab revealed candidiasis and this was first treated with amphotericin lozenges and then fluconazole. However, the problem worsened. On his own initiative JA stopped both drugs and resolution occurred, only to recur when they were resumed.

Discussion

While oral candidiasis is a common complication of diabetes mellitus, one must always consider an adverse drug reaction even though such an occurrence is rare.

Case study 2

Mr MB, 32 years of age, presented with a 3 day history of malaise, anorexia and painful lips and mouth. He had a past history of a renal transplant 2 years previously and has just returned from the Solomon Islands where he got a tattoo. His medications include cyclosporine, mycophenolate and prednisolone. He complains of difficulty swallowing and thirst.

On examination, MB was febrile, mildly dehydrated and had a pulse rate of 92. His lips were fissured, red and ulcerated. There were shallow extremely painful ulcers on the tongue, oro-pharynx and floor of mouth. The ulcers were irregular in form, had sloughing bases and intensely erythematous margins. There was associated cervical lymphadenopathy.

Investigations: full blood examination (FBE) (WCC 2.9, Hb 11.9), C-reactive protein (CRP) (71), renal function, and a swab for viral studies and polymerase chain reaction (PCR).

Management: as the lesions had the appearance of herpes stomatitis, valaciclovir was commenced as soon as the patient was confirmed to have adequate renal function. Intravenous fluids and analgesia were instituted until swallowing improved.

Discussion

Herpes stomatitis is uncommon in adults as it generally indicates a primary infection, which except in the immunocompromised, occurs in childhood. However, if immunosuppressed, a patient is more prone to herpes simplex, cytomegalovirus, streptococcal pharyngitis and oral candidiasis. It is important to consider these diagnoses and in the case of herpes, institute antiviral therapy before microbiological confirmation if there is a high index of suspicion.

In hand, foot and mouth disease, an infection due to coxsackie virus, vesicles form in the mouth and extremities.

Lichen planus, a T lymphocyte mediated disorder is seen in the mouth more commonly than the skin, although both sites may be affected. It frequently presents intra-orally as white striae or patches on the oral mucosa but has an erosive form that is painful (*Figure 3*).

Radiotherapy for oro-pharyngeal cancer invariably causes a dry mouth. Painful mucositis, which may persist for some months, is common and candidiasis may occur.

Drugs such as phenytoin and nifedapine and immunosuppressants, especially cyclosporine, may cause gingival overgrowth but these changes are not commonly painful.

The painful tongue

A common complaint, especially in the elderly, is a painful tongue. There may be an obvious cause such as a sharp tooth, rough area on a denture or calculus on the lingual surface of lower incisors. Once the cause is eliminated the discomfort resolves. Other causes of localised pain include tongue biting and neoplasia (see *Case study 4*).

Case study 3

Mrs AB, 48 years of age, was a recent immigrant from Cambodia. She was referred by a dermatologist with a 4 month history of recurrent painful ulcers of her oral mucosa and oro-pharynx. New ulcers occurred every few days and were extremely painful, making swallowing difficult. Their duration was 7–10 days. AB had no skin lesions and was otherwise well apart from gastro-oesophageal reflux disease. Her only medication was esomeprazole. Further questioning revealed that the lesions were initially small blisters, which soon burst leaving painful ulcers.

Investigations: a provisional diagnosis of a vesicular/bullous disorder was made and tissue was taken from the ulcer for immunofluorescence and histological examination. Blood was also taken to detect serum antibodies to epithelial cell cement.

Management: histochemistry and histology confirmed pemphigus vulgaris and as the patient had peptic ulcer disease she was commenced on betamethasone dipropionate cream applied directly to the ulcers rather than prednisolone. AB was warned that the cream could be ineffective as it is readily washed off by saliva. Unfortunately, this proved to be the case and it was necessary to resort to low dose prednisolone. This relieved the ulcers in a few days. Esomeprazole was doubled to 40 mg twice daily as a precaution against gastric irritation.

Discussion

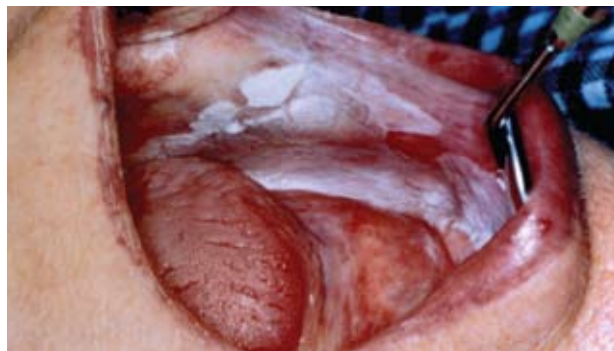
Bullous pemphigus and benign mucous membrane pemphigoid are the most common vesicular oral lesions. Blistering in these mucocutaneous autoimmune diseases is caused by tissue bound auto-antibodies directed against components of the basement membrane. Pemphigus vulgaris occurs most commonly on the skin and presents as pruritus followed by tense bullae, which eventually rupture leaving painful ulcers that form a crust. Untreated, skin and oral lesions persist and progressively involve a greater surface area.

Patients often complain of a burning tongue, aggravated by spicy foods. Examination may reveal a smooth depapillated or a beefy red tongue (*Figure 1*). Consider candidiasis, a common problem in the elderly or immune compromised and a nutritional deficiency of folate, B12 or iron. A swab should be taken if candidiasis is suspected and blood for assaying nutritional status in the case of a smooth red tongue.

Figure 2. Stevens-Johnson syndrome



Figure 3. Oral lichen planis



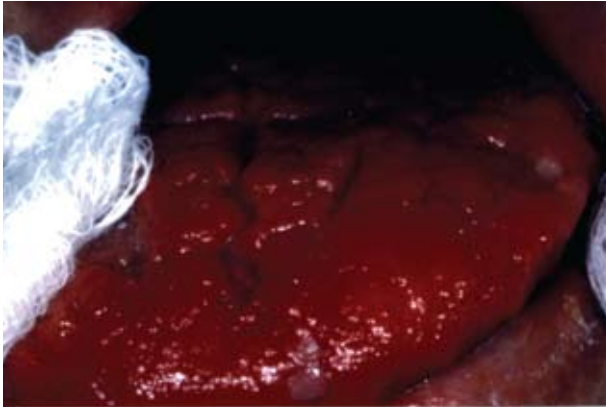
Case study 4

Mrs JC, 79 years of age, lives in sheltered accommodation and has a past history of cognitive impairment and a cerebrovascular accident 4 years previously. She complained of a persistent sore throat to the visiting doctor on several occasions. On examination, she was found to be edentulous and her palate and buccal mucosa were erythematous. JC wore full dentures. A diagnosis of oral candidiasis was made and she was given amphotericin lozenges. In time, the redness resolved but the sore throat persisted. She was prescribed roxithromycin. The pain worsened and she experienced some difficulty swallowing. Further examination revealed a large superficial ulcer at the base of the tongue. Subsequent biopsy showed it to be a poorly differentiated squamous cell carcinoma.

Discussion

Persistent oro-facial pain in an elderly patient must be considered of neoplastic origin until proven otherwise. In this patient the lesion was not readily visible on examining the oro-pharynx. In such cases it is mandatory to palpate the floor of the mouth and lateral margins of the tongue and check bimanually for submandibular lymph nodes.

Figure 4. Atrophic glossitis



Geographic tongue or migratory glossitis is a common benign condition of unknown aetiology characterised by areas of desquamation surrounded by white, slightly raised serpiginous margins (*Figure 4*). In most cases the condition is asymptomatic. Treatment is supportive. At times the tongue may appear normal with no evidence of oral mucosa disease.

In glossodynia (burning tongue) the cause is unknown, although in many cases it may have a psychological basis. A course of carbamazepine or low dose amitriptyline frequently relieves symptoms.

Summary of important points

- In assessing a painful mouth a detailed history and examination using good illumination are mandatory.
- Unilateral pain suggests a dental cause or mucosal lesion.
- Generalised pain may reflect systemic disease or be psychogenic.
- Any ulcer, swelling or mucosal change persisting for >3 weeks where no precipitating cause is evident should be considered for biopsy.
- Empirical treatment using antibiotics or antifungal therapy is to be discouraged.

Conflict of interest: none declared.

References

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