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This series provides an overview of current thinking in the more relevant areas of Oral Medicine, for primary care practitioners.

The series gives the detail necessary to assist the primary dental clinical team caring for patients with oral complaints that may be seen in general dental practice. Space precludes inclusion of illustrations of uncommon or rare disorders.

Approaching the subject mainly by the symptomatic approach, as it largely relates to the presenting complaint, was considered to be a more helpful approach for GPs rather than taking a diagnostic category approach. The clinical aspects of the relevant disorders are discussed, including a brief overview of the aetiology, detail on the clinical features and how the diagnosis is made, along with guidance on management and when to refer, in addition to relevant websites which offer further detail.

# Oral Medicine 9: Orofacial Pain

Specialist referral may be indicated if the Practitioner feels:

- The diagnosis is unclear;
- A serious diagnosis is possible;
- Systemic disease may be present;
- Unclear as to investigations indicated;
- Complex investigations unavailable in primary care are indicated;
- Unclear as to treatment indicated;
- Treatment is complex;
- Treatment requires agents not readily available;
- Unclear as to the prognosis;
- The patient wishes this.

## Pain

Pain in the teeth, mouth, face or head usually has a *local* cause – often the sequelae of dental caries (odontogenic pain) – but *psychogenic*, *neurological*, *vascular* and conditions where pain is referred from elsewhere may be responsible (Table 1).

Dental staff will be well versed in pain of local cause and therefore this article discusses mainly the conditions in

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### Local disorders

Teeth and supporting tissues:

- Jaws;
- Maxillary antrum;
- Salivary glands;
- Pharynx;
- Eyes.

### Possible psychogenic causes

- Chronic idiopathic facial pain (atypical facial pain);
- Burning mouth syndrome;
- Temporomandibular pain-dysfunction.

### Neurological disorders

- Idiopathic trigeminal neuralgia;
- Malignant neoplasms involving the trigeminal nerve;
- Glossopharyngeal neuralgia;
- Herpes zoster (including post-herpetic neuralgia);
- Multiple sclerosis.

### Vascular disorders

- Migraine;
- Periodic migrainous neuralgia;
- Giant cell arteritis.

### Referred pain

- Nasopharyngeal;
- Ocular;
- Aural;
- Cardiorespiratory:
  - Angina;
  - Lesions in the neck or chest (including lung cancer).

**Table 1.** Causes of orofacial pain.

which specialist help may be indicated. Many of the conditions discussed in previous articles in this series may cause pain.

The real significance to the patient of orofacial pain, apart from the pain itself, can range from the benign to potentially lethal conditions. Some

orofacial pain or headaches have an obvious but relatively unimportant cause (eg a hangover – caused mainly by the acetaldehyde resulting from metabolism of alcohol); other types of pain have no obvious underlying organic pathology (and are thus termed medically unexplained symptoms (MUS), eg atypical facial pain); some can threaten important faculties such as sight (eg giant cell arteritis), or even life (eg brain tumours).

## Diagnosis of orofacial pain

The history is the most important means of diagnosing orofacial pain (Figure 1).

In order to differentiate the widely disparate causes, it is essential to determine keypoints about the pain, especially:

■ **Location:** Valuable information can be obtained by asking if the pain is localized or diffuse, and watching the patient's reaction. For example, patients frequently point with one finger when describing pain of dental causes or trigeminal neuralgia, but atypical facial pain is much more diffuse, and may radiate across the midline.

■ **Character:** Patients should be asked about the severity and character of the pain, ie whether the pain is 'sharp', 'dull', 'aching', 'throbbing' or 'shooting'. However, bear in mind that patients often have difficulty finding adequate descriptors, and therefore it may be necessary to ask leading questions. Ask the patient to rate the pain severity on a scale of zero (no pain) to 10 (most severe pain that the patient has experienced), or ask them to mark this on a line divided into 10 equal sections (visual analogue scale) or use an assessment instrument such as the McGill Pain Questionnaire. These 'tools' help assess the severity of pain, accepting always that it is subjective, and they may also be useful

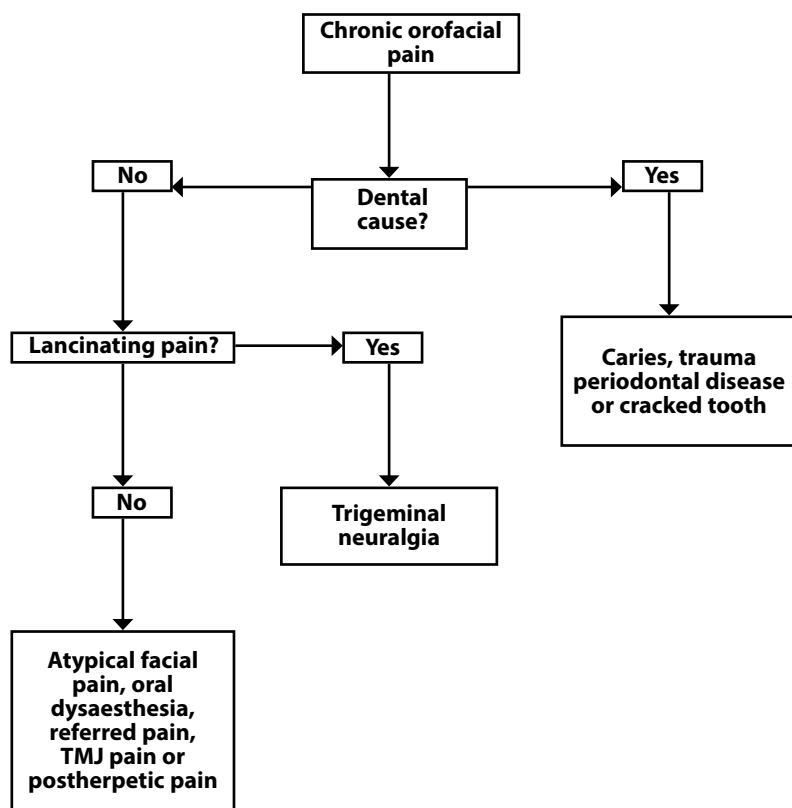


Figure 1. Chronic orofacial pain. (Reproduced from Scully C. *Oral and Maxillofacial Medicine*. Elsevier, 2008.)

in monitoring the response to treatment. Disturbance of the normal sleep pattern by pain is also useful in assessing the severity.

■ **Duration:** The average duration of each episode may help diagnosis. For example, pain from exposed dentine is fairly transient (lasting only for seconds following application of a stimulus), while the pain from pulpitis lasts for a much longer period. Trigeminal neuralgia is a brief lancinating pain lasting up to about 5 seconds, although some patients report a persistent background less severe pain – more of a dull ache; migrainous neuralgia typically lasts 30–45 minutes, while chronic idiopathic facial pain (atypical facial pain) is typically persistent.

■ **Frequency and periodicity:** Determine whether the pain occurs at specific times or is related to specific events. A ‘Pain Diary’ can help. For example, the pain of temporomandibular pain dysfunction syndrome may be more severe on waking, if this is associated with nocturnal

parafunctional activity such as clenching or tooth grinding. The pain of sinusitis is often aggravated by lying down. Periodic migrainous neuralgia frequently disturbs the patient’s sleep at a specific time each night, around 2am. One patient seen by the authors complained of pain fairly typical of periodic migrainous neuralgia, yet appearing around 2pm; it turned out he was a long-distance night driver, sleeping mainly during the day!

■ **Precipitating, aggravating and relieving factors:** It may be necessary to resort to leading questions to ask if temperature, biting, posture, analgesics, alcohol, etc affect the pain. For example, heat often aggravates dental pain; touching a trigger zone may precipitate trigeminal neuralgia attacks, stress may worsen atypical facial pain, and alcohol may induce episodes of migrainous neuralgia.

■ **Associated features:** Some types of pain may be associated with other features which are helpful diagnostically, such

as the swollen face in dental abscess, nausea and vomiting in migraine, or nasal stuffiness or lacrimation in migrainous neuralgia.

The cause of most orofacial pain is established mainly from the history, and examination findings are also helpful, not least in excluding local pathology. However, it is important to consider the usefulness of a Specialist who can arrange additional investigations, particularly imaging of the head and neck, using CT or MRI. It is crucial not to miss detecting organic disease and thus mislabelling the patient as having psychogenic pain, and not to miss a brain tumour underlying a patient with supposed ‘idiopathic’ trigeminal neuralgia.

## Local causes of orofacial pain

### Odontogenic pain

Most orofacial pain is, of course, related to dental disease – odontogenic causes – and will not be described further.

### Mucosal pain

Pain from oral mucosal lesions can be either localized or diffuse. Localized pain is usually associated with a mucosal break, either an erosion (a partial thickness loss of epithelium) or ulcer (a full thickness loss of epithelium), discussed in a previous article. Of course, the distinction between these painful conditions can at times be difficult or impossible and many patients have both.

Diffuse pain may also be caused by infection, or a systemic underlying deficiency state or other factors, and is usually then described as ‘soreness’ or sometimes ‘burning’.

Mucosal pain may be aggravated by sour, acidic, spicy, or salty foods, so that few affected patients can tolerate or enjoy citrus fruits or tomatoes for example. The area is usually also tender to touch.

## Other local causes of orofacial pain

### Jaws

Pain from the jaws can be caused by infection, direct trauma, malignancies, and rarely by Paget’s disease. However, unless associated with

infection or jaw fracture, retained roots and impacted teeth, and lesions such as cysts, are usually painless.

Malignant tumours usually produce deep, boring pain, sometimes associated with paraesthesia or anaesthesia, but odontogenic and other benign tumours of the bone do not normally produce pain. Lip numbness or tingling, therefore, may herald a tumour in the jaw bone.

**Salivary glands**

Pain from salivary gland disorders is mainly caused by duct obstruction, sometimes by infection or a tumour. The pain is usually localized to the affected gland, may be quite severe, and may be intensified by increased saliva production, such as before and with meals. Examination may reveal a swollen salivary gland, sometimes with tenderness and/or a degree of trismus.

**Sinuses and pharynx**

Disease of the paranasal sinuses and nasopharynx, which can cause oral and/or facial pain, include sinusitis and tumours, which can remain undetected until they have reached an advanced stage. Any suggestion of a discharge from the nose, or obstruction to breathing, cheek swelling or numbness or tingling of the upper lip should be taken seriously as they may herald an antral carcinoma.

**Pressure on mental nerve**

On occasions, if there is dehiscence of the mental nerve, as a result of resorption of the alveolar ridge, pain is caused by pressure from a denture.

**Temporomandibular joint pain**

Pain from the TMJ may result from dysfunction, trauma, inflammation and, very rarely, tumours, either in the head and neck, or even lungs.

**Temporomandibular pain-dysfunction syndrome**

Temporomandibular pain-dysfunction syndrome is a very common problem, characterized by pain, clicking and jaw locking or limitation of opening of

the jaw. Afflicting young women mainly, factors which have been implicated include over-opening of the mouth, muscle overactivity (eg bruxism, clenching), TMJ disruption and psychiatric history (eg anxiety, stressful life events). Precipitating factors may include local trauma, wide mouth opening, or emotional upset.

**Diagnosis**

Diagnosis is clinical. Pain from TMJ disease is usually dull, poorly localized, may radiate widely, is usually intensified by movement of the mandible and may be associated with trismus because of spasm in the masticatory muscles. Examination may reveal a click from the joint, limited jaw movements, and tender masticatory muscles. Any suggestion of a swollen and/or warm joint suggests true arthritis.

**Management**

Most patients recover spontaneously and progression to arthritis is virtually unknown. Therefore reassurance and conservative measures are the main management. TMJ pain-dysfunction can usually be effectively managed in general practice. Practitioners are usually well versed with this problem but possible options for treatment in a primary care environment are summarized in Table 2 and patient guidance in Table 3.

Recalcitrant cases may need Specialist attention, particularly if simple measures fail.

**Keypoints for patients: temporomandibular (TMJ) pain-dysfunction**

■ This is a common condition;

- Reassurance/explanation of the benign and self-limiting nature of the problem;
- Rest (eg soft diet and limitation of movement);
- Anti-inflammatory analgesic (eg ibuprofen 400 mg three times a day);
- Occlusal splint therapy;
- Local physiotherapy.

**Table 2.** Keypoints: management of TMJ pain-dysfunction.

- **Rest yourself and your jaw:**
- **Relax and practise stress reduction;**
- **Exercise** regularly;
- **Eat soft foods** and avoid hard, crusty foods like nuts or hard bread or those that need chewing a great deal;
- **Chew on your back teeth**, not the front ones;
- **Eat small bites;**
- **Sleep on your side.**
- **Avoid joint or muscle damage by avoiding:**
- **Contact sports;** wear a mouthguard if you must play contact sports;
- **Excessive jaw use** in yawning, grinding and clenching;
- **Chewing gum;**
- **Habits** such as biting:
  - Finger nails;
  - Pens and pencils;
  - Lip.
- **Excessive mouth-opening in:**
  - Long dental appointments;
  - General anaesthesia.
- **Cradling the telephone** between head and shoulder
- **Wind instrument playing**
- **Reduce muscle pain with analgesics and by applying:**
- **Cold packs** for 10 minutes every 3 hours for 72 hours after injury;
- **Hot packs** for 20 minutes every 3 hours to uninjured joints/muscles.
- **Re-educate the jaw opening:**
- **Open your mouth with a hinge movement:** exercise your jaw twice daily, opening 5 times in front of a mirror, ensuring the jaw opens vertically without deviating sideways;
- **Exercise your jaw** 3 times daily for 5 timed minutes:
  - Close your mouth on the back teeth;
  - Put the tip of your tongue on the palate behind your front teeth;
  - Move the tongue back across the palate as far as it will go;
  - Keep the tongue in this position with the teeth closed for 10 seconds;
  - Open your mouth slowly until the tongue starts to leave the palate;
  - Keep that position for 10 seconds;
  - Close your mouth;
  - Repeat over 5 minutes.

**Table 3.** Steps to manage TMJ pain-dysfunction.

- It appears to be related to stress, joint damage or habits involving the teeth and joints (eg tooth clenching or grinding);
- There are no serious long-term consequences; arthritis does not result;
- The symptoms usually clear spontaneously after some months but, in the meantime, rest, exercises, splints, or drugs may help.

#### Websites and patient information

<http://www.aaop.org>

<http://www.nidcr.nih.gov/OralHealth/Topics/TMJ/TMJDisorders.htm>

### Psychogenic causes of orofacial pain

Psychogenic (tension) headaches caused by anxiety or stress-induced muscle tension are common, especially in young adults. The pain typically affects the frontal, occipital and/or temporal regions, as a constant ache or band-like pressure, often worse by the evening, but usually abates with rest. Similar problems can affect the orofacial region.

Reassurance may be effective but the pain may also be helped by massage, warmth, non-steroidal anti-inflammatory drugs (NSAIDs), or by benzodiazepines, which are both anxiolytic and mild muscle relaxants, or by complementary therapies.

In some studies, nearly 40% of the population have reported frequent headaches and orofacial pain. The reason behind conditions with a psychogenic component, sometimes termed medically unexplained symptoms (MUS), may include:

- Possible links between neuro-humoral mechanisms and altered CNS function;
- The heightening of bodily sensations (lowered pain threshold) as a consequence of physiological processes, such as autonomic arousal, muscle tension, hyperventilation, or inactivity;
- Misattribution of normal sensations to serious physical disorders.

Features common to most MUS include:

- Constant chronic discomfort or pain;
- Pain often of a dull boring or burning type;
- Pain poorly localized;
- Pain may cross the mid-line to involve

the other side or may move elsewhere;

- Pain which rarely wakens the patient from sleep;
- Total lack of objective signs of organic disease;
- All investigations to identify an underlying organic illness are also negative;
- There are often recent adverse 'life-events', such as bereavement or family illness;
- There are often multiple oral and/or other MUS, such as headaches, chronic back or neck pain, pruritus, irritable bowel syndrome, insomnia, numbness or dysmenorrhoea;
- Cure is uncommon in most, yet few sufferers seem to try to use or persist in using analgesics.

Patients may bring diaries of their symptoms to emphasize their problem. Some have termed this the 'malady of small bits of paper' and, though there is by no means always a psychogenic basis, such notes characterize patients with MUS. These days, this is being replaced by Internet print-outs, which are also increasingly brought by well-informed patients who have no psychogenic problems whatsoever.

Occasional patients quite deliberately induce painful oral lesions and some have Munchausen's syndrome, where they behave in such a fashion as to appear to want operative intervention.

The most common types of orofacial pain with a strong psychogenic component are:

- Idiopathic (atypical) facial pain;
- Oral dysaesthesia (burning mouth syndrome);
- Atypical odontalgia;
- The syndrome of oral complaints.

Some clinicians also include temporomandibular pain-dysfunction in this category.

#### Chronic idiopathic facial pain (IFP)

Idiopathic facial pain is a constant chronic orofacial discomfort or pain, defined by the International Headache Society as *facial pain not fulfilling other criteria*. Therefore, like BMS, it is also a diagnosis reached only by the exclusion of organic disease; there are no physical signs, investigations are all negative and it is an MUS. Atypical facial pain is fairly common,

affecting probably around 1–2% of the population. Indeed, in some studies, nearly 40% of the population have reported frequent headache and/or orofacial pain.

### Keypoints: chronic idiopathic facial pain

- Similar symptoms may be seen in some neurological conditions;
- Cranial nerve examination should be carried out;
- X-rays, scans and/or blood tests are often required.

Pain is often of a dull, boring or burning type with an ill-defined location and there is:

- A total lack of objective signs;
- A negative result from all investigations;
- No clear explanation as to cause;
- Poor response to treatment.

Patients are often middle-aged or older and 70% or more are females. Most sufferers from IFP are otherwise normal individuals who are, or have been, under extreme stress, such as bereavement, or concern about cancer. There are often recent adverse life events, such as bereavement or family illness and/or dental or oral interventional procedures.

#### Clinical features

History findings in IFP include pain, mainly in the upper jaw, of distribution unrelated to the anatomical distribution of the trigeminal nerve, poorly localized, and sometimes crossing the mid-line to involve the other side or moving to another site. Pain is often of a deep, dull, boring or burning, chronic discomfort, and persists for most or all of the day but does not waken the patient from sleep. However, the patient may report difficulty sleeping.

There may also be multiple oral and/or other psychogenic related complaints, such as dry mouth, bad or altered taste, thirst, headaches, chronic back pain, irritable bowel syndrome or dysmenorrhoea. Patients only uncommonly use analgesics to try to control the pain, but there is a high level of utilization of healthcare services. There have often already been multiple consultations and attempts at treatment.

Pain is accompanied by altered behaviour, anxiety or depression. Over

50% of such patients are depressed or hypochondriacal, and some have lost or been separated from parents in childhood. Many lack insight and will persist in blaming organic diseases (or healthcare professionals) for their pain.

Clinical examination is unremarkable with a total lack of objective physical (including neurological) signs. All imaging studies and blood investigations are negative.

**Diagnosis of IFP**

Diagnosis is clinical through careful examination of the mouth, peri-oral structures, and cranial nerves, and imaging (tooth/jaw/sinus radiography and MRI/CT scan) to exclude organic disease, such as

space-occupying or demyelinating diseases (Table 4).

**Management of patients suffering idiopathic facial pain or pain with a psychogenic basis**

Few patients with IFP have spontaneous remission and thus treatment is usually indicated (Figure 2).

Reassurance and attention to any factors such as the dentures or haematinic deficiencies may be indicated, but active dental or oral surgical treatment, or attempts at 'hormone replacement', or polypharmacy in the absence of any specific indication, should be avoided.

However, it is important, where possible, to identify and relieve factors which lower the pain threshold

(fatigue, anxiety and depression). Simple analgesics such as NSAIDs should be tried initially, before embarking on more potent preparations.

Patient information is a very important aspect in management. Cognitive-behavioural therapy (CBT) or a Specialist referral may be indicated.

It is important to acknowledge clearly the reality of the patient's symptoms and distress and never attempt to trivialize or dismiss them:

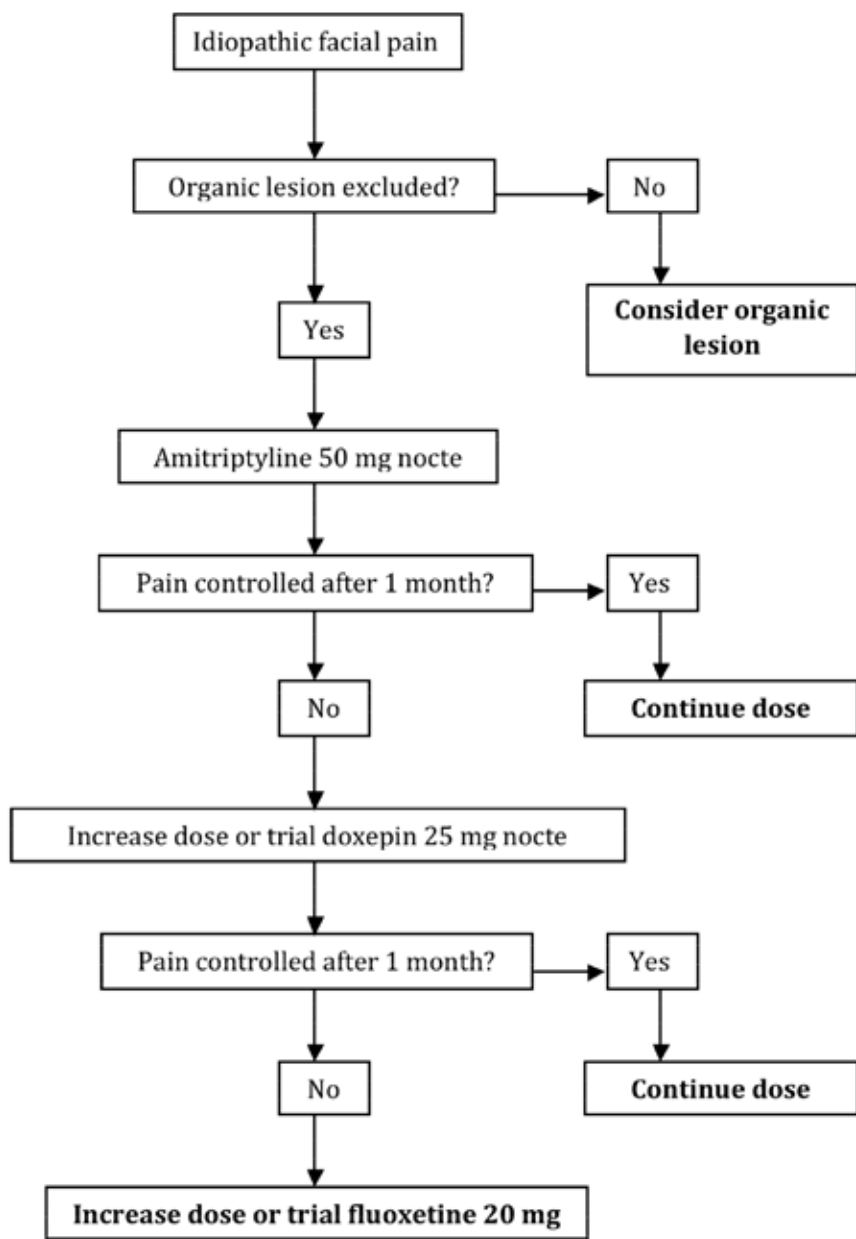
- Try to explain the psychosomatic background to the problem, ascribing the symptoms to causes for which the patient cannot be blamed.
- Set goals which include helping the patient cope with the symptoms rather than attempting any impossible cure.
- Do not repeat examinations or investigations at subsequent appointments, since this only serves to reinforce abnormal illness behaviour and health fears.
- Avoid attempts at relieving pain by operative intervention – since these are rarely successful; indeed, active dental measures such as restorative treatment, endodontics or oral surgical treatment, in the absence of any specific indication, should be avoided as they may simply reinforce the patient's perception that the pain has an organic basis.
- Offer referral to a Specialist or a trial of antidepressants, explaining that these agents are being used to treat the symptoms not depression, that some antidepressants have analgesic activity, and that antidepressants have been shown in controlled trials to be effective for this problem, even in non-depressed people.

**Keypoints for patients: idiopathic facial pain**

- This is fairly common;
- The cause is not completely known;
- It may be caused by increased nerve sensitivity;
- There may be a background of stress;
- There are usually no serious long-term consequences;
- X-rays and blood tests *may* be required;
- Treatment takes time and patience; some nerve-calming drugs can help.

	<b>Idiopathic trigeminal neuralgia</b>	<b>Idiopathic facial pain</b>	<b>Migrainous neuralgia</b>
<b>Age (Years)</b>	>50	30–50	30–50
<b>Sex</b>	F>M	F>M	M>F
<b>Site</b>	Unilateral, mandible or maxilla	+ Bilateral, maxilla	Retro-orbital
<b>Associated Features</b>	–	+/- Depression	+/- Conjunctival injection +/- Lacrimation +/- Nasal congestion
<b>Character</b>	Lancinating	Dull	Boring
<b>Duration of episode</b>	Brief (seconds)	Continual	Few hours
<b>Usual timing of pain</b>	Daytime	Daytime	Night-time
<b>Precipitating</b>	Trigger areas	+/- Adverse life events	+/- Alcohol
<b>Main treatments</b>	Carbamazepine	Cognitive behavioural therapy, Antidepressants	Oxygen, sumatriptan

**Table 4.** Differentiation of important types of chronic orofacial pain.



**Figure 2.** Management of IFP. (Reproduced from Scully C. *Oral and Maxillofacial Medicine*. Elsevier, 2008.)

**Local causes**

Erythema migrans (geographic tongue);  
Lichen planus;  
Candidosis;  
Denture problems (eg ill-fitting dentures, inadequate freeway space, encroachment on tongue space);  
Parafunctional activity (eg tongue thrusting habit, clenching)

**Systemic causes**

Psychogenic;  
Cancerophobia;  
Depression;  
Anxiety states;  
Hypochondriasis;  
- Deficiency of:  
Vitamin B, especially B<sub>12</sub>;  
Folate  
Iron  
- Dry mouth  
- Diabetes  
- Drugs

**Table 5.** Causes of a burning sensation in the mouth.

chronic complaint, affecting up to 0.7–2.6% of the population and seen especially in middle-aged or elderly patients, particularly in females, in a ratio of more than 3:1 and even as high as 7:1. There is no specific relationship to hormonal changes, despite the fact that BMS is often seen in middle-aged or elderly peri- or post-menopausal females. BMS has been reported in 10–40% of women presenting for treatment of menopausal symptoms.

Defined clinical conditions that must be excluded since they can also present with burning include:

- Erythema migrans (geographic tongue);
- Lichen planus;
- Dry mouth;
- Candidosis;
- Glossitis such as may be associated with haematinic (iron, folic acid, vitamin B) deficiency;
- Diabetes.

Uncommon causes that may need to be considered include:

- Hypothyroidism;
- Lupus erythematosus;

**Websites and patient information**

<http://facial-neuralgia.org/conditions/atfp.html>

**Burning mouth 'syndrome'(BMS)**

There may be definable organic causes of this type of complaint, often described as a burning sensation (Table 5), and a patient in such pain may well also manifest psychological reactions

to the experience. However, burning mouth 'syndrome' (BMS: also known as glossopyrosis; glossodynia; oral dysaesthesia; or stomatodynia) is *the term usually used when symptoms, described as a burning sensation, exist in the absence of identifiable organic aetiological factors*. BMS is often a MUS but it must also be recognized that it may well not be a single entity. BMS is a fairly common

- Mucositis;
- Drugs (especially angiotensin-converting enzyme [ACE] inhibitors; protease inhibitors; cytotoxic agents; clonazepam);
- Hypersensitivity (to sodium metabisulphite, nuts, dental materials and other substances);
- Galvanic reactions to metals in the mouth.

Organic problems which sometimes present with no detectable clinical lesions, but that can cause similar symptoms include:

- A haematological deficiency state (deficiencies in iron, folic acid or vitamin B<sub>12</sub>) in about 30%;
- Restricted tongue space from poor denture construction;
- Parafunction such as nocturnal bruxism or tongue-thrusting;
- Neuropathy, such as follows damage to the chorda tympani nerve.

No precipitating cause for BMS can be identified in over 50% of the patients but, in others, a psychogenic cause such as anxiety, depression or cancerophobia can be identified in about 20% and, in some patients, BMS appears to follow either dental intervention or an upper respiratory tract infection.

#### Clinical features

BMS most frequently affects the tongue, but it can also affect the palate or, less commonly, the lips or lower alveolus. The history is that the burning sensation is chronic, usually bilateral, often relieved by eating and drinking, in contrast to pain caused by organic lesions which is typically aggravated by eating. Alcohol may also relieve or reduce the symptoms.

Patients with BMS often have multiple oral and/or other psychogenic related complaints, such as dry mouth, bad or altered taste, thirst, headaches, chronic back pain, irritable bowel syndrome or dysmenorrhoea. There may be changes in sleep patterns and mood and, though patients only uncommonly use analgesics to try to control the symptoms, there have often already been multiple consultations. Interestingly, patients with BMS also have heightened ability to taste – they are ‘supertasters’.

Examination shows no clinically

detectable signs of mucosal disease or tenderness or swelling of the tongue or affected area, and no neurological or other objective signs.

### Keypoints; burning mouth syndrome

- Similar symptoms may be seen in some organic conditions;
- Blood tests may be required;
- Psychological assessment can be helpful.

#### Diagnosis

Diagnosis of BMS is clinical and it is important to exclude organic causes such as erythema migrans (geographic tongue), candidosis, lichen planus, dry mouth, glossitis, diabetes or denture problems. Importantly, all investigations prove normal.

Investigations indicated may include:

- Laboratory screening for:
  - Anaemia, a vitamin or iron deficiency (blood tests);
  - Diabetes (blood and urine analyses);
  - Thyroid dysfunction (blood analyses);
  - Xerostomia (salivary flow rates);
  - Candidosis (oral rinse);
- Psychological screening using, for example, the Hospital Anxiety and Depression (HAD) scale.

Management is discussed above.

### Keypoints for patients: burning mouth syndrome

- This is a common condition;
- The cause is not usually known;
- It may be a nerve hypersensitivity;
- It is not infectious;
- It may occasionally be caused by some mouth conditions, dry mouth, deficiencies, diabetes or drugs;
- It has no long-term consequences; Blood tests or biopsy *may* be required;
- It may be controlled by some nerve-calming drugs.

#### Websites and patient information

<http://www.go4hope.org>

[http://www.mayoclinic.com/invoke.cfm?objectid=4E7AF27F-25B0-43D0-](http://www.mayoclinic.com/invoke.cfm?objectid=4E7AF27F-25B0-43D0-90383E896030B033)

[90383E896030B033](http://www.mayoclinic.com/invoke.cfm?objectid=4E7AF27F-25B0-43D0-90383E896030B033)

#### Atypical odontalgia

Atypical odontalgia is pain and hypersensitive teeth in the absence of detectable pathology. The pain is typically indistinguishable from pulpitis or periodontitis but is aggravated by dental intervention. Probably a variant of idiopathic facial pain, it should be managed similarly.

#### The syndrome of oral complaints

Multiple pains and other complaints may occur simultaneously or sequentially, and relief is rarely found (or admitted). Patients may bring diaries of their symptoms to emphasize their problem. This has been termed the ‘malady of small bits of paper’, and though there is not always a psychogenic basis, such notes characterize patients with non-organic complaints or people with highly obsessional personalities.

### Neurological (neuropathic) causes of orofacial pain

Sensory innervation of the mouth, face and scalp depends on the trigeminal nerve, so that diseases affecting this nerve anywhere in the course from the orofacial region to the brain can cause orofacial pain or, indeed, sensory loss, sometimes with serious implications.

Any lesion affecting the trigeminal nerve may cause pain, often with physical signs such as facial sensory or motor impairment. Such causes include:

- Trauma;
- Cerebrovascular disease;
- Demyelinating disease (eg multiple sclerosis);
- Neoplasia (eg nasopharyngeal, antral or brain tumours); or
- Infections such as herpes zoster (Figure 3) or HIV/AIDS.

#### Idiopathic trigeminal neuralgia

Idiopathic trigeminal neuralgia (ITN) is an uncommon nerve disorder that causes episodes of unilateral intense, stabbing, electric shock-like pain in the areas of the face where the branches of the nerve are distributed – lips, eyes, nose, scalp, forehead, upper jaw, or lower

jaw. ITN onset is mainly in the 50–70 year age group.

The cause of ITN is unclear, but one hypothesis is that a cerebral blood vessel becomes atherosclerotic and therefore less flexible with age, then pressing on the roots of the trigeminal nerve in the posterior cranial fossa, causing neuronal discharge.

The characteristic features of ITN are summarized as:

A. Paroxysmal attacks of facial or frontal pain which lasts a few seconds to less than 2 minutes. These attacks occur especially in the morning, and rarely cause sleep disturbance.

B. Pain has at least 4 of the following characteristics:

- Distribution along one or more divisions of the trigeminal nerve;
- Sudden intense, sharp superficial, stabbing or burning in quality;
- Pain intensity severe;
- Precipitation from trigger areas or by certain daily activities such as eating, talking, washing the face, shaving, or cleaning the teeth;
- Between paroxysms, the patient is usually entirely asymptomatic. Some patients experience a dull ache at other times.

C. No neurological deficit.

D. Attacks are stereotyped in the individual patient.

E. Exclusion of other causes of facial pain by history, physical examination and special investigations when necessary.

A less common form of the disorder called 'Atypical Trigeminal Neuralgia' may cause less intense, constant, dull burning or aching pain, sometimes with occasional electric shock-like stabs. Both forms of the disorder most often affect one side of the face, but some patients experience pain at different times on both sides.

#### Diagnosis

ITN is universally considered to be one of the most painful afflictions known. Severe pain suggestive of ITN but with physical signs such as facial sensory or motor impairment can result from lesions discussed above. **These serious conditions must therefore be excluded** by history, examination; including neurological

assessment especially of cranial nerves, and investigations; including imaging (usually MRI) to exclude space-occupying or demyelinating disease, and blood tests to exclude infections and systemic vasculitides.

Only then can the term idiopathic (benign) trigeminal neuralgia be used!

### Keypoints; trigeminal neuralgia

- Similar symptoms may be seen in some neurological conditions;
- Cranial nerve examination should be carried out;
- X-rays, scans and/or blood tests are often required.

#### Management

Few patients with ITN have spontaneous remission and thus treatment is usually indicated. However, ITN is often an intermittent disease with apparent remissions lasting months or years, but recurrence is common and very often the pain spreads to involve a wider area over time and the intervals between episodes tend to shorten.

Patients with supposed ITN are best seen at an early stage by a Specialist in order to confirm the diagnosis and initiate treatment. In the acute situation, the patient's symptoms may be controlled on a short-term basis with injection of a regional local anaesthetic.

Medical treatment, typically using anticonvulsants, is successful for most patients (Table 6). Carbamazepine is the main drug used, but it is not an analgesic and must be given continuously prophylactically for long periods, and under

strict medical surveillance. Adverse effects must be monitored, including:

- Balance (disturbed – ataxia); this tends to be the feature that limits the dose of carbamazepine;
- Blood pressure (may increase); patients must have a baseline test and then blood pressure estimations for 3 months, then 6-monthly;
- Blood tests – mainly for liver function (may become impaired); and bone marrow function (red and white cells and/or platelets may be depressed).

Other agents such as gabapentin, phenytoin, lamotrigine and baclofen are available and some patients also report having reduced or relieved pain by means of alternative medical therapies, such as acupuncture, chiropractic adjustment, self-hypnosis or meditation.

Should medical care become ineffective, or produce excessive undesirable side-effects, neurosurgical procedures are available to relieve pressure on the nerve or to reduce nerve sensitivity.

### Keypoints for patients: trigeminal neuralgia

- This is an uncommon disorder;
- The cause is unknown;
- It involves spontaneous activity of pain nerves;
- It is not known to be infectious;
- Similar symptoms may be seen in some neurological conditions; X-rays, scans and/or blood tests may therefore be required;
- There are usually no long-term consequences;
- Symptoms may be controlled with drugs, freezing the nerve, or surgery.

#### Websites and patient information

[http://ihs-classification.org/en/02\\_](http://ihs-classification.org/en/02_)

Medical	Surgical
<ul style="list-style-type: none"> <li>■ Carbamazepine</li> <li>■ Oxcarbazepine</li> <li>■ Gabapentin</li> <li>■ Lamotrigine</li> <li>■ Phenytoin</li> </ul>	<ul style="list-style-type: none"> <li>■ Cryotherapy</li> <li>■ Balloon compression of trigeminal ganglion</li> <li>■ Microvascular decompression</li> <li>■ Gamma knife surgery</li> </ul>

Table 6. Medical and surgical treatments for ITN.





Figure 3. Herpes zoster, palate.

klassifikation/04\_teil3/13.01.01\_facialpain.html

<http://www.mayoclinic.com/health/trigeminal-neuralgia/DS00446>

#### Glossopharyngeal neuralgia

Glossopharyngeal neuralgia is much less common than trigeminal neuralgia. Occasionally glossopharyngeal neuralgia is secondary to tumours. The pain is of a similar nature but affects the throat and ear, and typically is triggered by swallowing or coughing. Carbamazepine is usually less effective than for trigeminal neuralgia and adequate relief of pain can be difficult. A Specialist opinion is warranted to investigate and manage these patients.

#### Herpetic and post-herpetic neuralgia

Herpes zoster (shingles), the recrudescence of herpes-varicella-zoster virus latent in sensory ganglia after chickenpox, is often preceded and accompanied by neuralgia, but a unilateral rash and ulceration is typical (Figure 3). Neuralgia may also persist (post-herpetic neuralgia) after the rash has resolved and can cause continuous burning pain, in contrast to the lancinating pain of trigeminal neuralgia, which also affects mainly elderly patients. A Specialist opinion is warranted to investigate and manage these patients.

### Vascular causes of orofacial pain

Several disorders in which the most obvious organic feature is vascular dilatation or constriction can cause orofacial pain. The pain is usually obviously in the face or head rather than in the mouth alone but occasionally can involve

both, and can be difficult to differentiate from other causes of orofacial pain (Table 1). These disorders include:

- Migraine (usually obvious and not causing oral pain alone, and therefore not included here);
- Migrainous neuralgia;
- Giant cell arteritis.

#### Migrainous neuralgia (cluster headache)

Migrainous neuralgia is less common than migraine but more likely to cause orofacial pain. Males are mainly affected (M:F = 4:1) and attacks often begin in about middle age (Table 4). The pain is unilateral, occurs in attacks, is burning and 'boring' in character, and usually localized around the eye. Generally, the attacks commence, and often awaken the patient, at the same time each night or in the early hours of the morning, hence the term 'alarm clock headache'. This pain may be associated with profuse watering and 'congestion' of the conjunctiva, rhinorrhoea and nasal obstruction on the affected side. The attacks usually end in less than one hour. Attacks are sometimes precipitated by alcohol.

Migrainous neuralgia is managed by a Specialist, with a variety of agents, including sumatriptan, beta-blockers, indometacin, or oxygen inhalations.

#### Cranial arteritis (temporal arteritis; giant-cell arteritis)

Cranial arteritis is a febrile disease, in which giant cells appear in the arteries and cause a deranged internal elastic lamina. It most commonly affects the elderly. The headache is intense, deep and aching, throbbing in nature and persistent. It is frequently made worse when the patient lies flat in bed and it may be exacerbated or reduced by digital pressure on the artery involved. Occasionally, the artery (usually the superficial temporal artery) may be enlarged and tender. It is also characterized by malaise, weakness, weight loss, anorexia, fever, and sweating.

Diagnosis is supported by a raised erythrocyte sedimentation rate and C-reactive protein (or plasma viscosity). Arterial biopsy demonstrates fragmentation of the internal elastic lamina.

Although it is a self-limiting disease, patients with cranial arteritis may be threatened with loss of vision. Accordingly, urgent specialist referral for diagnosis and early treatment with high dose systemic corticosteroids (prednisolone) is indicated.

### Referred causes of orofacial pain

Pain may occasionally be referred to the mouth, face or jaws from the following:

- **Neck:** cervical vertebral disease, especially cervical spondylosis, very occasionally causes pain referred to the face.
- **Heart:** in patients with angina. The pain usually affects the mandible, is initiated by exercise (especially in the cold) and abates quickly on rest.
- **Lungs:** orofacial pain emanating from lung cancer is a well-recognized entity and can mimic, for example, TMJ pain-dysfunction syndrome.
- **Oesophagus:** pain plus sialorrhoea may result from oesophageal lesions.
- **Styloid process:** Eagle's syndrome, a rare disorder due to an elongated styloid process (stylalgia), may cause pain on chewing, swallowing or turning the head
- **Eyes:** pain from the eyes, arising for example, from disorders of refraction, retrobulbar neuritis (eg in multiple sclerosis), or glaucoma, can radiate to the orbit, maxilla or frontal region.
- **Ears:** middle ear disease may cause headaches or pain in the TMJ region. Conversely, oral disease not infrequently causes pain referred to the ear, particularly from lesions of the posterior tongue.
- **Pharynx:** carcinoma of the pharynx may cause orofacial pain.

A Specialist opinion is warranted to investigate and manage these patients.

#### Patients to refer:

- Trigeminal neuralgia in view of possibility of demyelination or space occupying lesion;
- Giant cell arteritis in view of risk of blindness;
- Patients with chronic idiopathic facial pain who need psychological help;
- Malignancy.