

Diagnosis Of Facial Pain

Pain is commonest symptom leading to attendance to a dental surgeon. About 50% of people only visit dentist for pain relief. Pulpitis & periapical periodontitis are commonest causes of pain in and around the jaws but other causes must always be excluded. It is thus very important to have a thorough knowledge of the main causes of pain arising in the head and neck region.

A meaningful classification of oral & maxillofacial pain is very difficult to achieve and the system used here is by no means perfect. You may prefer to use another system or surgical sieve but you should have one format in your mind. Classification by pathology is often helpful - Degenerative, Immunological, Metabolic, Traumatic, Infective, Neoplastic (DIM TIN). Whether formulating a differential diagnosis or an examination essay answer you should consider the incidence, aetiology, sex ratio, geographical variation, pathology, microscopic features, macroscopic features, management & prognosis of a disease or condition. The following mnemonic may help to jog your memory: In A Surgeons Gown Physicians May Make Much Progress.

There are 2 main categories based on anatomical site of pain:

1. Diseases of the mouth and jaws
2. Extraoral diseases

1. Diseases of the mouth and jaws

a) Diseases of the teeth and supporting tissues

- i Pulpitis - pain with hot or cold - poorly localised
- ii Periapical periodontitis - well localised - pain on biting
- iii Periapical abscess - deep severe pain - may be systemically unwell
- iv Lateral periodontal abscess - as for iii but tooth usually vital - combined lesion
- v Acute ulcerative gingivitis - deep seated ache in jaws - associated with halitosis
- vi Pericoronitis - inflamed operculum usually lower 8 - maybe trismus and tissue space infection

These are responsible for the overwhelming majority of cases of facial pain. The cause is usually obvious and simple history and clinical investigations +/- radiography will confirm or refute the diagnosis. However, beware that dental disease may coexist with other more serious conditions that are the real cause of the pain such as carcinoma. It is also a common mistake to "miss" a simple dental cause of pain in favour of a more esoteric diagnosis especially around examination time!{:~} Contrary to popular opinion childhood teething is not painful.

b) Diseases of the oral mucosa

- i Aphthous ulcers - exclude autoimmune disorders, haematinic deficiencies and conditions like erythema multiforme & Stevens Johnson syndrome.
- ii Erosive lichen planus - non erosive form is often "sore" steroids or laser if severe
- iii Herpetic infections - simplex and zoster - Primary AHGS often very painful & debilitating supportive treatment and prevent secondary infection. Acyclovir if severe or immunocompromised. Zoster deep seated intense pain due to involvement of trigeminal ganglion associated with vesicles over peripheral nerve - Ramsay Hunt syndrome.
- iv Atrophic glossitis - Fe and B12 deficiency especially in middle aged & elderly women. If deficiency established replacement will often be curative but do not give supplements if not deficient
- v Neoplasms - scc is painless in early stages but becomes painful when invasive or secondarily infected. Always biopsy suspicious ulcers present for more than 2 weeks.

c) Disease of the jaws

- i Fractures - due to mobile bone ends - pain resolves when immobilised
- ii Osteomyelitis & osteoradionecrosis - avascular necrosis with secondary infection - prevention is far superior to cure!
- iii Infected cysts
- iv Malignant neoplasms - sarcomas are rare, primary intrabony scc is vanishingly rare but mucosal scc invading bone (T4) is not uncommon.

d) pain in the edentulous patient

The edentulous are prone to a variety of painful conditions not seen in the dentate and not readily classifiable in any other way. However, they are also liable to suffer from many of the conditions mentioned previously.

- i Mucosal ulceration from denture trauma - old and/or poor fitting exacerbated by atrophic mucosa of elderly
- ii Incorrect freeway space - a prosthetic problem!
- iii Pressure on mental nerve - with alveolar resorption mental foramen & nerve come to lie on crest of ridge. Confirm diagnosis by palpation and x-ray. Relieve denture and/or surgically reposition the nerve.
- iv Pressure on genial tubercles - similar aetiology to iii. Relieve denture, remove tubercles, augment ridge or implants.
- v Infected residual cyst

e) postoperative pain

- i Alveolar osteitis (dry socket) follows 3% of all and 14-37% of third molar extractions. More common with single than multiple extractions - in pregnancy and OCP. Can't predict it. Individual susceptibility

- ii Fracture - Should be obvious at the time!
- iii Osteomyelitis - More likely in diabetics - and poor OH. Always suspect if postoperative pain extends over a week or so. Treatment is by antibiotics, removal of sequestra and masterly inactivity if at all possible.
- iv Nerve trauma - dysaesthesia - neuroma from instrument, fracture, needle or infection
- v Tissue space infection }
- vi Haematoma } all may arise from surgery and or needle trauma
- vii Muscle spasm } and associated with trismus and systemic upset

A history of a recent operation or dental procedure will make you suspect one of the above but don't forget that pain from another cause may be coincident with a recent operation.

f) masticatory pain

Pain in and around the tmj on eating and function is usually due to mfpds or true tmj disease. While unerupted third molars are often blamed for tmj pain they are rarely painful especially if unerupted, covered by bone and not associated with pericoronitis. Because it is so common in the population there is a danger of over diagnosing tmj pain and missing simple caries and periodontal disease and not so simple squamous cell carcinoma.

- i Myofacial pain dysfunction syndrome - a lecture in its own right
- ii TMJ pathology - arthritis - internal derangement - fracture etc.
- iii Temporal arteritis (jaw claudication) see below
- iv Trigeminal neuralgia - see below

2 Extra-Oral Disease

The bird on the lawn is more likely to be a sparrow than a golden eagle so make sure you exclude the common dental causes of facial pain before hunting for an extraoral cause.

a) disease of the maxillary antrum

- i Sinusitis - acute & chronic
- ii Malignant neoplasms especially scc

With sinusitis the frontal and ethmoid sinuses are usually also affected. Direct pressure over the sinuses elicits pain as does bending forward and "jogging". Radiographs may not show any abnormality in cases of severe sinusitis and conversely a cloudy antrum is not diagnostic of sinusitis although it is pretty good circumstantial evidence.

You **must** be aware of the signs and symptoms of carcinoma of the antrum. Because this tumour has a large space to expand into it is usually far advanced before declaring itself, resulting in a poor prognosis. It may present as tooth ache, tooth mobility, failure of a socket to heal, numbness over the cheek and or maxillary teeth, ill fitting

dentures, epistaxis, nasal obstruction, "catarrh", proptosis & diplopia are late signs. Plain radiographs will demonstrate bone erosion or expansion.

b) diseases of the salivary glands

- i Acute parotitis - mumps, bacterial secondary to dehydration and ascending infection in the elderly & debilitated rare nowadays erythema over gland - pus from duct - pyrexia and unwell.
- ii Sjogrens syndrome - Rarely painful but may be if severe. Systemic steroid may help the pain but do little for the disease itself.
- iii Sialadenitis - gustatory pain & swelling - Intraoral calculi may be simply removed - those in the depths of the gland will need gland excision. Some settle spontaneously following a sialogram presumably due to flushing and antibacterial action of iodine.
- iv Malignant neoplasms - deep lobe parotid tumours may result in referred pain ear or on swallowing but most are not painful unless rapidly growing with expansion of capsule.

c) vascular pain

- i Temporal arteritis - presents as jaw claudication and classically with headache and pain in the scalp when the hair is combed. Urgent diagnosis and treatment with steroids is essential as blindness can come on rapidly if not treated. Diagnosis is by temporal artery biopsy. The esr / plasma viscosity will be elevated.
- ii Migraine - due to spasm of intracranial blood vessels. Associated with raised plasma serotonin levels and normal histamine levels. Presents as hemicrania often with photophobia there may be transient neurological impairment.
- iii Migranous neuralgia (cluster or alarm clock headaches) - similar aetiology to classical migraine with oedema and dilatation of wall of internal carotid artery. However, plasma histamine levels are raised. Usually affects young to middle aged males. May be precipitated by alcohol, vasodilators or be spontaneous. Classically occurs at same time of day especially during sleep. Severe pain localised to orbit, temple or maxilla. Often accompanied by other manifestation of vascular change such as facial flushing and sweating, lacrimation and nasal obstruction. Responds to ergotamine which is most effective if given prophylactically and by the subcutaneous or rectal route. Spontaneous remission is characteristic.
- iv Angina & myocardial infarction may present as pain in the left mandible the former appears on exertion the latter may be at rest. Rarely it may be the only symptom of an infarct but usually will be associated with chest and left arm pain, pallor, nausea +/- loss of consciousness and cardiac arrest.

d) neurological disorders

- i Trigeminal neuralgia - often has trigger zone, exacerbated by eating & function. Intense lancinating pain, patients dread it's return & may become suicidal. No associated sensory changes. Second and 3rd division most

commonly affected, first rarely and pain confined to one side of the face. Carbamazepine 100 - 200mg tds is often of value therapeutically and diagnostically with upto 80% of patients finding it beneficial either partly or completely. Phenytoin may also be added in to augment pain relief and reduce the dose of carbamazepine needed. Peripheral management includes nerve blocks, cryotherapy and nerve section. These will inevitably result in anaesthesia over the area supplied by the nerve but many patients will prefer the numbness to the pain. Always give a trial injection of a long acting local anaesthetic like marcaine so that patients can experience numbness for several days before deciding to have a more permanent procedure performed with alcohol or surgically. Central treatments include rhizotomy and jantetta procedure (aberrant vessel runs over trigeminal ganglion).

- ii Multiple sclerosis - may present as trigeminal neuralgia but if so is a late sign and associated with multiple defects of sensation, power and vision. About 2-3% of patient with trigeminal neuralgia have multiple sclerosis.
- iii Glossopharyngeal neuralgia - pain is of similar quality to trigeminal neuralgia but condition is much rarer. pain on eating and especially swallowing patients may be afraid to swallow their own saliva leading to drooling. Carbamazepine may be helpful but less so than in trigeminal neuralgia - nerve section is usually necessary.
- iv Postherpetic neuralgia - said to affect upto 10% of patients who had trigeminal zoster previously. Pain may be mild or severe and often more chronic than trigeminal neuralgia. Often history of zoster and scars may be present. Very resistant to treatment either by drugs or nerve section. Narcotic analgesics often needed. TCNS has been found to be of value in some cases. Some evidence that treating primary zoster infection aggressively with acyclovir may reduce incidence of post herpetic neuralgia.
- v Eagle's syndrome - Pain on swallowing due to a calcified stylomandibular ligament. Diagnosed on x-ray. treatment is to fracture the ligament with digital pressure!

e) diseases of the ears and eyes

- i Otitis externa & interna, mastoiditis may be very painful and the close proximity to the tmj may result in the source of the pain being incorrectly diagnosed.
- ii Ophthalmic problems are rarely mistaken for pain of dental origin although exceptionally glaucoma can be confused with maxillary pain

f) psychosomatic pain

- i atypical facial pain
- ii burning mouth syndrome
- iii atypical odontalgia

All are examples of psychogenic pain for which no organic cause can be identified. Pain is exacerbated by anxiety, stress & depression. Some patients have an underlying psychological or psychiatric disorder which is where treatment should be directed. The

pain is no less real to the patient who seldom accepts that there is not a organic cause for their complaint. Many become diffident or aggressive if onward referral to a psychiatrist is suggested.

It is vitally important to recognise that psychogenic facial pain is a diagnosis by exclusion. There are no special tests that can confirm the diagnosis rather it is made having excluded all other causes. When a diagnosis of psychogenic pain has been made it is important to resist surgical treatment in these patients as this only serves to reinforce their belief that there is a physical cause for their pain. Empathic counselling is important. In some cases prescription of a tricyclic antidepressant is of value (Prothieden 75mg nocte). Benzodiazepines should not be prescribed.

Very often what is needed is for a complete change in the patients home/work environment which is something you can not prescribe. The most important aspect to success in treating this condition is to convince the patient that you believe that they are in pain, that you have excluded all known causes (be sure to identify the cancerphobe and allay their fears forthrightly) and that operative treatment will make matters worse. If the patient can be made to identify their pain with times of increased stress then your task is much easier.