



Medicine for Managers

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Dental Pain

Doctors' surgeries are regularly visited by patients with toothache. They haven't gone to the dentist because they don't have one, because they are too expensive or because they simply haven't thought of it. The result is that the doctor must manage the symptom. Identification of the cause can be challenging, even for a dentist, and inappropriate treatment will not resolve the problem.

Dental problems frustrate doctors and, in general, they tend to be managed by giving a prescription for an antibiotic, a course of action which may not be appropriate.

Some doctors remember the words of Ambrose Bierce!

"A dentist is a magician who puts metal in your mouth and pulls coins out of your pocket"

Ambrose Bierce

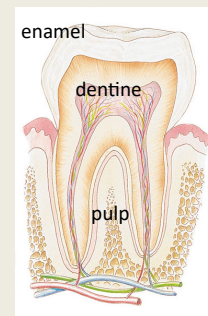
Let's start with some revision. Children have **twenty deciduous (milk) teeth**; two incisors, one canine and two deciduous molars in each quadrant (or quarter of the mouth).

They are shed at between six and twelve years of age and are replaced by twenty-eight permanent teeth which erupt during the same period; two incisors, one canine, two premolars (or bicuspid = having two cusps) and two molars at the back.

A further molar may erupt in each quadrant at about age eighteen and this third molar, or wisdom tooth as it is better known, completes the dentition making a grand total of **thirty-two permanent teeth**.

Not all patients have third molars and in some, they do not erupt but remain buried.

Teeth are made up of a very hard enamel on the outside, dentine which forms the bulk of the tooth structure and a central pulp which contains blood vessels and nerves.



Dental pain has a variety of causes.

Everyone has seen grossly decayed (caries) teeth and people in obvious distress with swollen faces.

However, there are many other causes of dental pain; some involve the soft tissues (principally

the gums), or the result of an extraction, the consequence of oral ulceration, or the result of temporo-mandibular joint dysfunction.

Dental decay (caries) occurs when acid in the mouth destroys the hard tissue making up the teeth.

The acid is produced because bacteria present normally in the mouth break-down sugary or starchy foods (*like sweets and other nice things!*) with the production of acid which lowers the pH (*makes the mouth more acid*).

The result is that the enamel and dentine are progressively destroyed by the acid. The nerves in the tooth are therefore exposed to the outside.

This may result in toothache which is characterised by sensitivity to hot, cold and sweet things.

The treatment of the problem is to remove the caries and to fill the tooth, thereby sealing the cavity and eliminating the sensitivity of the nerve to the outside.

Antibiotics have no place in controlling pain or sensitivity as a result of simple decayed cavities in teeth.

A **dental abscess** occurs when the pulp within the tooth dies. This is most commonly because caries destroys the hard tooth substance protecting it and bacteria invade the pulp and create infection causing it to die. The infected

pulp chamber predisposes to the formation of a dental abscess. Infection breaks through the apex of the tooth root to form a **periapical abscess** (see diagram).

The result is often severe, throbbing tooth ache, facial swelling and sometimes systemic signs of infection with fever and feeling unwell.

Sometimes the jaw muscles also go into spasm. Treatment of a periapical abscess is by drainage

of the infection, either by extracting the tooth or by opening and cleaning the pulp chamber and the canals to remove all the infection (**root canal treatment**).

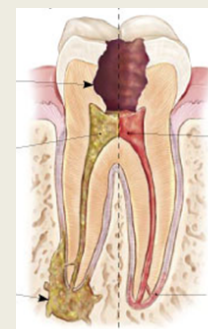
The pulp spaces are replaced with inert filling to prevent further infection.

Antibiotic therapy can be used to help prevent the abscess from getting worse or spreading but it does not cure the abscess or clear the periapical infection.

Seeing the dentist is urgent if further complications are to be avoided. Such complications may include osteomyelitis, large abscesses within the jawbone, sinusitis and infection in the soft tissues of the floor of the mouth (cellulitis) which may be life-threatening.

The management for a doctor suspecting an abscess is therefore to use an antibiotic but to

In simple terms, if someone has tooth ache, in most cases the cause can be identified from the symptoms. If the tooth is sensitive to hot and cold, it may be caused by a broken filling or decay. If the tooth is painful, unrelated to hot and cold, and the tooth is tender to press, there is likely to be an abscess at the end of the root. In either case, see a dentist.



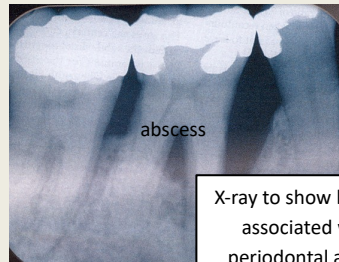
emphasise that dental treatment is required urgently.

Sometimes infection occurs in pockets in the gum round a tooth to form a periodontal abscess. Such infections may cause involved teeth to become loose. They may be painful but are often not as severe as a periapical abscess.

Antibiotic treatment is less valuable and the principles of treatment are to drain the abscess and clean out any pocketing in the gum. If severe, extraction may be the only alternative.

After extraction a socket may become infected, a condition known as '**dry socket**'.

Generally it occurs because a firm clot does not form in the socket following the extraction. The lining of the socket therefore becomes infected causing pain, which may be severe, and accompanied by a foul taste and a foul odour.



X-ray to show bone loss associated with a periodontal abscess.

The dentist will treat the socket with medicated dressings, which is the most effective management, but analgesia and antibiotic may be helpful.

Mouth symptoms including pain and discomfort may occur for a variety of other reasons.

Mouth ulcers may be problematic. They occur commonly but occasionally they may be serious. Oral ulceration will be reviewed next week.

Of course it goes without saying that most dental infections can be prevented by avoiding dental disease. Decay and gum disease can be prevented or minimised by good oral hygiene with twice daily brushing of the teeth with a fluoride toothpaste, combined with regular dental checks-up.

Remember the anonymous quotation which says it all

"You don't have to brush your teeth . . just the ones you want to keep!"

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