Managing symptomatic third molar teeth

‘Wisdom teeth’ (i.e. the third molars) are the last teeth to be formed in the jaws, and do not form in some individuals. These teeth are associated with partial and incomplete eruptions, leading to painful problems. Chris Bell explains how to proceed should problems arise.

Third molars are the last teeth to be formed in the jaws. They begin to form and calcify at around 11–12 years of age. Wisdom teeth are not always formed in the dental jaws and some people do not develop third molars. If evidence of wisdom tooth formation is not seen on radiographs after a patient’s 14th year it is likely that they will not form. If there is enough room to allow eruption to take place wisdom teeth usually appear in the mouth from the age of 17 up to the early 20s. However in many patients there is not enough room for wisdom teeth to erupt. This may result in partial eruption with or without impaction or a total failure of eruption. For many patients it is the partial eruption of the teeth that leads to episodes of pain and infection. This arises commonly due to difficulty in good localized oral hygiene causing soft tissue inflammation, and in many cases decay in either the wisdom tooth or the lower second molar tooth. Food impaction is also associated with pain and swelling. In some cases the presence of an erupted upper third molar may cause additional problems due to trauma caused through biting upon soft tissue present over an unerupted or partially erupted lower wisdom tooth. However, not all wisdom teeth cause symptoms and many fail to erupt into the mouth and may remain without symptoms.

Usual treatment

The usual treatment for symptomatic wisdom teeth is to remove them. In many cases this requires a surgical approach due to their partial eruption or impaction against the tooth in front. This surgery is associated with some pain, swelling, postoperative bleeding and in a small number of cases a risk to the sensation to the lower lip, chin and tongue.

In the past it was common practice to remove all a patient’s wisdom teeth as a precaution to avoid potential problems in the future. This practice has now ceased since the introduction of a number of guidelines which assist a dentist in deciding which wisdom teeth should be assessed for removal.

Clinical guidance documents

The summary at the end of the article shows the various clinical guidance documents that have been produced. It is advised that as part of reading this article the sites are viewed and key documents downloaded.

All three sets of guidance have a very similar theme. This is that the routine practice of the prophylactic removal of pathology free impacted third molars should be discontinued.

The common reasons for removal within these documents are listed as:

- Overt or previous history of infection including pericoronitis (usually more than one episode)
- Unrestorable caries
- Non-treatable pulp and/or periapical pathology
- Cellulitis, abscess and osteomyelitis
- Periodontal disease
- Orthodontic abnormalities
- Prophylactic removal in the presence of specific medical and surgical conditions.
- Facilitation of restorative treatment including provision of prosthesis.
- Internal/external resorption of tooth or adjacent teeth
- Pain directly related to a third molar
- Tooth in line of bony fracture or impeding trauma management
- Fracture of tooth
- Disease of follicle including cyst/tumour
- Tooth/teeth impeding orthognathic surgery or reconstructive jaw surgery
- Tooth involved in/within field of tumour resection
- Satisfactory tooth for use as donor for transplantation.

There are other occasions where although direct symptoms have not occurred, the risk of disease is such that consideration should be given to removal.

Two situations in which a high probability of consequential local disease
is present are:

- When a vertical or distoangular impacted tooth is at, or close to, the occlusal plane but the occlusal surface has been half or more covered for an extended period by soft tissue, pericoronitis is more likely
- When a partly-erupted impacted wisdom tooth in mesioangular or horizontal impaction has a contact point at or close to the amelocemental junction of the second molar the risk of caries of the latter is increased especially in the absence of a high standard of oral hygiene.

**Impactions commonly associated with third molars**
There are various types of impactions commonly associated with third molars. These are:
- Distoangular impaction
- Vertical impaction
- Horizontal impaction
- Mesioangular impaction.

**Problems arising from symptomatic third molars**

**Pericoronitis**
This is inflammation of the soft tissues either associated with the third molar. It is most often seen when the crown is partially erupted and space exists beneath the soft tissue that is hard to clean. In some cases trauma from an erupted third molar biting upon the soft tissue makes matters worse. Bacteria involved are usually anaerobic gram negative and best respond to antibiotics such as metranidazole.

Treatment considerations include local oral hygiene measures, provision of a short course of antibiotics as described above. Consideration should be given to the removal of the trauma from the upper tooth either by smoothing the cusps or removal of the tooth.

**Dental caries**
There is an increased risk of dental decay due to plaque and food retention especially with mesioangular impacted teeth.

**Cyst formation**
In rare cases an unerupted third molar may be associated with cystic change.

**SUMMARY OF CLINICAL GUIDANCE**

Royal College of Surgeons of England

National Institute for Health and Clinical Excellence
Published in 2000. Available at www.nice.org.uk/nicemedia/pdf/wisdomteethguidance.pdf

Scottish Intercollegiate Guidelines Network
Published in 2000. Available at www.sign.ac.uk/guidelines/fulltext/43/index.html.
usually managed by surgical removal often by referral to a tertiary care service such as a hospital. However, in some cases the skill and expertise to remove a third molar may exist within the primary care dental practice setting.

Initial examination
The patient is initially examined with respect to the history of symptoms together with a review of their medical and dental history. Radiographic assessment of third molars usually entails the use of extra oral panoramic films or lateral obliques. On rare occasions a good intraoral film can be satisfactory.

Anaesthesia
The surgical removal is usually carried out under local anaesthesia often with the aid of some form of sedation, usually intravenous. The use of general anaesthesia is declining in favour of sedation.

Surgical procedure and analgesia
The procedure entails soft tissue incision intraorally and bone removal with specialist drills and burrs. In many cases the tooth will require division to assist removal. Each patient must be given the opportunity to be fully informed about the procedure together with the different choices of local anaesthesia, sedation or general anaesthesia. They must also be warned about the short term discomfort and swelling experienced post operatively. Post operative analgesic advice is based upon the patient’s medical history but usually involves the regular use of across the counter analgesics such as paracetamol and non-steroidal anti-inflammatory drugs such as ibuprofen. On occasion, a codeine supplement is also discussed. Many patients will require a period of absence from work to recover.

Potential risks
Apart from the above warnings there is an association of possible interference
with the inferior dental and lingual nerve supply as a result of the surgical procedure. Some element of risk assessment can be given to the patient at consultation after examination of the radiographs. The incidence is low in most cases often being quoted as low as 1%. However it is an ethical requirement that patients are fully appraised before consenting. If a patient does experience some form of post operative nerve impairment is usually presents ranging from paraesthesia of either the lower lip chin of tongue. If the tongue is involved the sense of taste may be altered. Changes in sensation are usually confined to only one of these areas if they occur. A patient who experiences such changes must be followed up on a regular basis. It is rare for a patient to experience changes in more than one site. In many cases sensation returns to normal but it may require several weeks to a few months depending upon the severity. In a few cases return to normal sensation does not occur or partially occurs. It is thought that one 6 months to a year has passed it is likely that no further resolution of nerve impairment may continue. This is an area where specialist advice and follow up should be provided.

**KEY POINTS**

- Third molars (wisdom teeth) are the last teeth to form in the jaws.
- The usual treatment for symptomatic wisdom teeth is to remove them. In many cases this requires a surgical approach due to their partial eruption of impaction against the tooth in front.
- Clinical guidance documents have been produced regarding the treatment of symptomatic third molars.
- The surgical removal is usually carried out under local anaesthesia often with the aid of some form of sedation, usually intravenous. The use of general anaesthesia is declining in favour of sedation.