

Dental extraction

From Wikipedia, the free encyclopedia

A **dental extraction** (also referred to as **exodontia**) is the removal of a tooth from the mouth. Extractions are performed for a wide variety of reasons, including tooth decay that has destroyed enough tooth structure to prevent restoration. Extractions of impacted or problematic wisdom teeth are routinely performed, as are extractions of some permanent teeth to make space for orthodontic treatment.



Surgical extraction of an impacted molar. NIDCR.

Contents

- 1 History
- 2 Reasons for tooth extraction
- 3 Types of extraction
- 4 Post Extraction Healing
- 5 Complications
- 6 See also
- 7 References
- 8 External links

History

Historically, dental extractions have been used to treat a variety of illnesses, as well as a method of torture to obtain forced confessions. Before the discovery of antibiotics, chronic tooth infections were often linked to a variety of health problems, and therefore removal of a diseased tooth was a common treatment for various medical conditions. Instruments used for dental extractions date back several centuries. In the 14th century, Guy de Chauliac invented the dental pelican, which was used through the late 18th century. The pelican was replaced by the dental key which, in turn, was replaced by modern forceps in the 20th century. As dental extractions can vary tremendously in difficulty, depending on the patient and the tooth, a wide variety of instruments exist to address specific situations.

Reasons for tooth extraction

The most common reason for extraction is tooth damage due to breakage or decay. There are additional reasons for tooth extraction:

- Severe tooth decay or infection. Despite the reduction in worldwide prevalence of dental caries, still it is the most common reason for extraction of (non-third molar) teeth with up to two thirds of extractions.^[1]
- Extra teeth which are blocking other teeth from coming in.
- Severe gum disease which may affect the supporting tissues and bone structures of teeth.
- In preparation for orthodontic treatment (braces)
- Teeth in the fracture line

- Fractured teeth.
- Insufficient space for wisdom teeth (impacted third molars). Although many dentists remove asymptomatic impacted third molars,^{[2][3]} American as well as British Health Authorities recommended against this routine procedure, unless there are evidences for disease in the impacted tooth or the near environment.^[4] The American Public Health Association, for example, adopted a policy, *Opposition to Prophylactic Removal of Third Molars (Wisdom Teeth)* because of the large number of injuries resulting from unnecessary extractions.^[5]
- Receiving radiation to the head and neck may require extraction of teeth in the field of radiation.

Types of extraction

Extractions are often categorized as "simple" or "surgical".

Simple extractions are performed on teeth that are visible in the mouth, usually under local anaesthetic, and require only the use of instruments to elevate and/or grasp the visible portion of the tooth. Typically the tooth is lifted using an elevator, and using dental forceps, rocked back and forth until the Periodontal ligament has been sufficiently broken and the supporting alveolar bone has been adequately widened to make the tooth loose enough to remove. Typically, when teeth are removed with forceps, slow, steady pressure is applied with controlled force.

Surgical extractions involve the removal of teeth that cannot be easily accessed, either because they have broken under the gum line or because they have not erupted fully. Surgical extractions almost always require an incision. In a surgical extraction the doctor may elevate the soft tissues covering the tooth and bone and may also remove some of the overlying and/or surrounding bone tissue with a drill or osteotome. Frequently, the tooth may be split into multiple pieces to facilitate its removal.



An extracted 3rd molar that was horizontally impacted.

Post Extraction Healing

Following extraction of a tooth, a blood clot forms in the socket usually within 1 hour. Bleeding is common in this first hour, but its likelihood decreases quickly as time passes, and is unusual after 24 hours. The raw open wound overlying the dental socket takes about 1 week to heal. Thereafter, the socket will gradually fill in with soft gum tissue over a period of about 1 - 2 months. Final closure of the socket with bony remodeling can take 6 months or more.



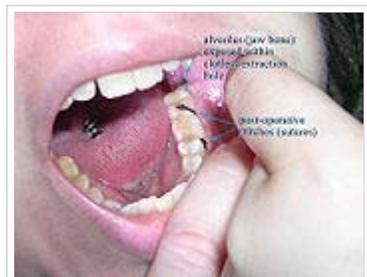
2 extracted teeth from a 14 year old male, compared against a £1 coin, which has a diameter of 22.50 millimetres (0.89 inches).

Complications

1. Infection: although rare, it does occur on occasion. The dentist may opt to prescribe antibiotics pre- and/or post-operatively if he/she determines the patient to be at risk.
2. Prolonged bleeding: The dentist has a variety of means at his/her disposal to address bleeding, however, it is important to note that small amounts of blood mixed in the saliva after extractions are normal - even up to 72 hours after extraction. Usually, however, bleeding will almost completely stop within eight hours of the surgery, with only minuscule amounts of blood mixed with saliva coming from the wound.
3. Swelling: Often dictated by the amount of surgery performed to extract a tooth (e.g. surgical insult to the tissues both hard and soft surrounding a tooth). Generally, when a surgical flap must be elevated (i.e. and the periosteum covering the bone is thus injured), minor to moderate swelling will occur. A poorly-cut soft tissue flap, for instance, where the periosteum is torn off rather than cleanly elevated off the underlying bone will often increase such swelling. Similarly, when bone must be removed using a drill, more swelling is likely to occur.
4. Sinus exposure and oral-antral communication: This can occur when extracting upper molars (and in some patients, upper premolars). The maxillary sinus sits right above the roots of maxillary molars and premolars. There is a bony floor of the sinus dividing the tooth socket from the sinus itself. This bone can range from thick to thin from tooth to tooth from patient to patient. In some cases it is absent and the root is in fact in the sinus. At other times, this bone may be removed with the tooth, or may be perforated during surgical extractions. The doctor typically mentions this risk to patients, based on evaluation of radiographs showing the relationship of the tooth to the sinus. It is important to note that the sinus cavity is lined with a membrane called the Sniderian membrane, which may or may not be perforated. If this membrane is exposed after an extraction, but remains intact, a "sinus exposed" has occurred. If the membrane is perforated, however, it is a "sinus communication". These two conditions are treated differently. In the event of a sinus communication, the dentist may decide to let it heal on its own or may need to surgically obtain primary closure—depending on the size of the exposure as well as the likelihood of the patient to heal. In both cases, a resorbable material called "gelfoam" is typically placed in the extraction site to promote clotting and serve as a framework for granulation tissue to accumulate. Patients are typically provided with prescriptions for antibiotics that cover sinus bacterial flora, decongestants, as well as careful instructions to follow during the healing period.
5. Nerve injury: This is primarily an issue with extraction of third molars, however, can technically occur with the extraction of any tooth should the nerve be in close proximity to the surgical site. Two nerves are typically of concern, and are found in duplicate (one left and one right side): 1. the inferior alveolar nerve, which enters the mandible at the mandibular foramen and exits the mandible at the sides of the chin from the mental foramen. This nerve supplies sensation to the lower teeth on the right or left half of the dental arch, as well as sense of touch to the right or left half of the chin and lower lip. 2. The lingual nerve (one right and one left side), which branches off the mandibular branches of the trigeminal nerve and courses just inside the jaw bone, entering the tongue and supplying sense of touch and taste to the right and left half of the anterior 2/3 of the tongue as well as the lingual gingiva (i.e. the gums on the inside surface of the dental arch). Such injuries can occur while lifting teeth (typically the inferior alveolar), but are most commonly caused by inadvertent damage with a surgical drill. Such injuries are rare and are usually temporary, but depending on the type of injury (i.e. Seddon classification: neuropraxia, axonotmesis, & neurotmesis), can be prolonged or even permanent.
6. Displacement of tooth or part of tooth into the maxillary sinus (upper teeth only). In such cases, almost



Example of post-operative swelling following third molar (wisdom teeth) extractions.



Example of alveolar osteitis (dry socket) following lower third molar (wisdom tooth) extraction; six days post-surgery.

always the tooth or tooth fragment must be retrieved. In some cases, the sinus cavity can be irrigated with saline (antral lavage) and the tooth fragment may be brought back to the site of the opening through which it entered the sinus, and may be retrievable. At other times, a window must be made into the sinus in the Canine fossa--a procedure referred to as "Caldwell luc".

7. Dry socket (Alveolar osteitis) is a painful phenomenon that most commonly occurs a few days following the removal of mandibular (lower) wisdom teeth. It is commonly believed that it occurs because the blood clot within the healing tooth extraction site is disrupted. More likely, alveolar osteitis is a phenomenon of painful inflammation within the empty tooth socket because of the relatively poor blood supply to this area of the mandible (which explains why dry socket is usually not experienced in other parts of the jaws). Inflamed alveolar bone, unprotected and exposed to the oral environment after tooth extraction, can become packed with food and debris. A dry socket typically presents as a sharp and sudden increase in pain commencing 2–5 days following the extraction of a mandibular molar, most commonly the third molar. This is often extremely unpleasant for the patient; the only symptom of dry socket is pain, which often radiates up and down the head and neck. A dry socket is not an infection, and is not directly associated with swelling because it occurs entirely within bone — it is a phenomenon of inflammation within the bony lining of an empty tooth socket. Because dry socket is not an infection, the use of antibiotics has no effect on its rate of occurrence. The risk factor for alveolar osteitis can dramatically increase with smoking after an extraction.

See also

- Dental x-ray
- Endodontic therapy
- Gum disease
- Oral and maxillofacial surgery
- Tooth abscess
- Toothache
- Wisdom teeth

References

1. ^ Zadik Y, Sandler V, Bechor R, Salehrabi R (August 2008). "Analysis of factors related to extraction of endodontically treated teeth". *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* **106** (5): e31. doi:10.1016/j.tripleo.2008.06.017 (<http://dx.doi.org/10.1016%2Fj.tripleo.2008.06.017>) . PMID 18718782 (<http://www.ncbi.nlm.nih.gov/pubmed/18718782>) .
2. ^ Zadik Y, Levin L (April 2006). "[Decision making of Hebrew University and Tel Aviv University Dental Schools graduates in every day dentistry--is there a difference?]" (in Hebrew). *Refuat Hapeh Vehashinayim* **23** (2): 19–23, 65. PMID 16886872 (<http://www.ncbi.nlm.nih.gov/pubmed/16886872>) .
3. ^ Zadik Y, Levin L (April 2007). "Decision making of Israeli, East European, and South American dental school graduates in third molar surgery: is there a difference?" (http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6WKF-4N8JDW3-J&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=734474d0fe654970b56c219106722fb6) . *J. Oral Maxillofac. Surg.* **65** (4): 658–62. doi:10.1016/j.joms.2006.09.002 (<http://dx.doi.org/10.1016%2Fj.joms.2006.09.002>) . PMID 17368360 (<http://www.ncbi.nlm.nih.gov/pubmed/17368360>) . http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6WKF-4N8JDW3-J&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=734474d0fe654970b56c219106722fb6.
4. ^ Morant H (April 200). "NICE issues guidelines on wisdom teeth" (<http://www.bmj.com/cgi/reprint/320/7239/890/a>) . *British Medical Journal* **320** (7239): 890A. doi:10.1136/bmj.320.7239.890 (<http://dx.doi.org/10.1136%2Fbjm.320.7239.890>) . PMID 10741982 (<http://www.ncbi.nlm.nih.gov/pubmed/10741982>) . PMC 1117823 (<http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&artid=1117823>) .

<http://www.bmj.com/cgi/reprint/320/7239/890/a>. Retrieved 2008-08-08.

- ⁵ [^] "Opposition to Prophylactic Removal of Third Molars (Wisdom Teeth)" (<http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1371>) . *Policy Statement Database*. American Public Health Association. 2008-10-28. <http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1371>. Retrieved 2010-02-24.

External links

- [Tooth Removal Warnings \(http://www.exodontia.info/ExodontiaWarnings.html\)](http://www.exodontia.info/ExodontiaWarnings.html)

Retrieved from "http://en.wikipedia.org/wiki/Dental_extraction"

Categories: [Dentistry procedures](#) | [Oral and maxillofacial surgery](#)

- This page was last modified on 13 July 2010 at 01:18.
- Text is available under the Creative Commons Attribution-ShareAlike License; additional terms may apply. See Terms of Use for details.
Wikipedia® is a registered trademark of the Wikimedia Foundation, Inc., a non-profit organization.

- [Privacy policy](#)
- [About Wikipedia](#)
- [Disclaimers](#)