Oral surgery is the field of dentistry that includes the extraction of teeth and orthognathic surgery. This includes surgical and medical management of oral surgery problems from diagnosis to treatment. Oral surgery is more than just the extraction of teeth, as some residencies may require a medical degree as well or may include a medical degree as part of the training; these residencies last between 4-6 years after receiving your degree in dentistry. Other sort of cases that oral surgeons may work on include trauma and cosmetic surgery to improve or modify a patient's lifestyle, or save a life.

For the scope of this paper, we are focusing on the extraction of teeth. It's important to note that a patient's medical history plays a vital role in any sort of invasive or surgical procedure; an understanding of systemic diseases and medical conditions will certainly affect the proposed treatment plan. Proper diagnosis, as well as patient management and clinical efficiency and planning are all vital to the process of oral surgery, from the standpoint of the general clinician. The understanding of basic anatomy and location of anatomical structures is incredibly important to know because clinicians don't want to damage any nerves or arteries.

A. Instrumentation

a. **Hemostats** → Placing and removing surgical blades
b. **Needle Holders** → Used specifically for pushing needles and suturing
c. **Elevators** → Used for lever action, displacement and smaller root tips; Need a purchase point to properly displace tooth structure
d. **Bone file** → Used for superficial smoothing bone; can only be used with a pull-stroke motion
e. **Curette** → Used to enucleate a cavity, cyst, granuloma, etc.
f. **Minnesota Retractor** → Used to retract cheeks, and protect mucosa during cutting
g. **Periosteal elevator** → Used to retract the gingival tissues around desired teeth, and to reflect the gingival tissues
h. Forceps
    i. **150** → Maxillary, universal; gradual S-shaped curve
    ii. **151** → Mandibular, universal; 90 degree bend
    iii. Anteriors can be extracted with several kinds of forceps, such as straight forceps or Ash forceps
i. **Bite block** → Supports mandible to prevent stress on the temporomandibular joint (TMJ)

Figure 6-43

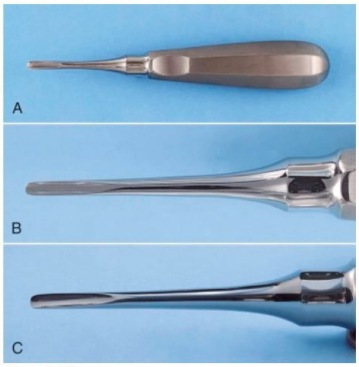

Figure 6-32

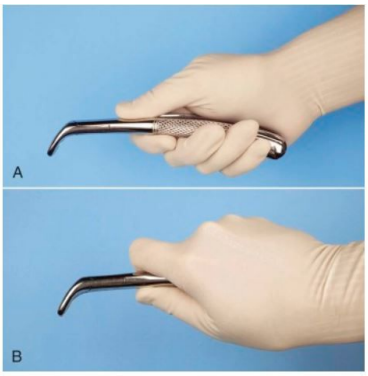

Figure 6-40

B. Anesthetics

a. Profound local anesthesia is needed if the tooth is to be removed without sharp pain for the patient; therefore, it is essential that the surgeon remember the precise innervations of all teeth and surrounding soft tissue, as well as the kinds of injection necessary to anesthetize those nerves completely. Based on the sensory innervation of teeth and the surrounding tissue, appropriate anesthetic must be provided to each area.

b. Local anesthesia results in loss of pain, temperature and touch sensations, but it does not anesthetize the proprioceptive fibers of the involved nerves
    i. During extraction, the patients feels a sensation of pressure, especially when the force is substantial

c. Anesthetics used can be with or without vasoconstrictors (epinephrine) and include the following:
    i. Lidocaine, Articaine, Prilocaine, Mepivacaine

d. Sedation → can be used for the management of patient anxiety. This can include: nitrous oxide, or IV sedation using diazepam or midazolam


Figure 6-57
Basic extraction tray.

C. Basic procedures

a. Apply local anesthetic to the appropriate area of the mouth
b. The removal of teeth from the alveolar process requires the use of the following mechanical principles and simple machines: the lever the wedge and the wheel & axle.
    i. Elevators are used primarily as levers. The beaks of the forceps act as wedges to expand alveolar bone and displace the tooth in the occlusal direction. A triangular elevator can e used in the role of a wheel-&-axle machine to retrieve the root from a socket
c. Essentially you will flap or retract the gingival tissues surround the teeth and the adjacent teeth using a periosteal elevator; you want to preserve it and do not want to cause unnecessary trauma to the gingiva
d. Next you want to try to determine a necessary purchase point on the tooth and attempt to elevate the tooth from the bone and disrupt the PDL fibers using a variety of elevators.
e. Lastly, you will want to luxate the tooth using the appropriate forceps. Anterior, posterior, mandibular and maxillary teeth all require a particular forcep.
    i. Extraction forceps should be seated with STRONG apical pressure to expand the crestal bone and to displace the center of rotation as far apically as possible.
f. This is a only a general overview of the extraction of a tooth. Each tooth requires a distinct set of procedures and instruments so that it may be extracted as atraumatically as possible. Each clinician is different in what they decide to do and you will be taught and shown various techniques in your dental career.


Figure 7-2

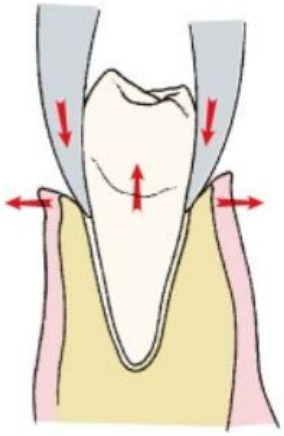
Figure 7-39

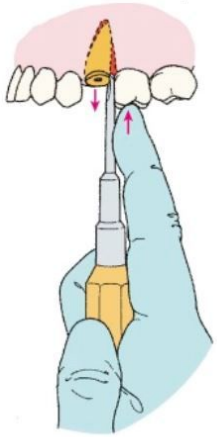
Figure 7-40

D. Post Operative Management

a. Once the tooth has been removed, the socket requires proper care and should only be debrided if necessary
b. Any sort of debris or periapical lesion not removed with the tooth should be removed with a curette
c. Expanded buccolingual plates should be compressed back to their original configuration using finger pressure.

d. Bone should be palpated through the overlying mucosa to check for any sharp, bony projections. These should be properly smoothed using a bone file or another instrument
e. Initial control of hemorrhage is achieved by use of a moistened 2x2 inch gauze placed over the extraction socket
f. Patient management
    i. Over the counter medications may be taken before the local anesthetic wears off and as needed for pain according to the instructions
        1. Antibiotics should only be prescribed according to the AHA and other recognized medical organizations
    ii. Patients must avoid eating hard or crunchy foods and stick to a soft diet for the first 12-24 hours
    iii. Patients can start warm salt water rinses the day after an extraction and by the 3rd or 4th day, the patient may resume their preoperative oral hygiene measures
    iv. Patients should be made aware of any sort of postoperative complications such as swelling, trismus or dry sockets.

References:

Contemporary Oral and Maxillofacial Surgery
Hupp, Ellis, Tucker; **6th Edition**