

# **Textbook of Oral and Maxillofacial Surgery**

**Gustav O Kruger**

**(The C V Mosby Company, St Louis, Toronto, London, 1979)**

**Fifth Edition**

**Chapter 4**

**Forceps extraction**

**Gustav O Kruger**

After the history, radiographs, and examination have been completed, the exodontic procedure is discussed with the patient, and the operator makes notes concerning the planning of the procedure, including premedication if indicated. The anxious patient who will be accompanied to the office can start premedication the night before the procedure or one-half hour before arriving at the office. Other patients can be premedicated in the office while waiting in the reception room. Medications by mouth or by intramuscular or intravenous routes vary in depth of effect and time of onset according to the agent and the amount used.

## **Anesthesia**

The armamentarium should be in place, covered with a sterile towel, when the patient enters the operatory. The patient is seated, and the chair is adjusted to the proper position for the administration of the anesthetic. A paper napkin is placed on the patient, and he is given one-third cup of mouthwash in a paper cup to rinse his mouth. The local anesthetic is administered. The operating light is turned off, and the patient is allowed to read or is engaged in conversation of 3 to 10 minutes, depending on the tooth or teeth to be extracted. The operator should use at least a full minute of this time to study intently the radiograph of the tooth involved and its surrounding structures for anatomical and pathological variations from normal.

## **Position of Patient**

The chair usually has to be repositioned to be satisfactory for exodontics. For mandibular extractions it should be as low as possible. For maxillary extractions the upper jaw of the patient should be at the height of the operator's shoulder. These positions allow the upper arm to hang loosely from the shoulder girdle and obviate the fatigue associated with holding the shoulders in an unnaturally high position during the course of a day. The low positions allow the operator to bring the back and leg muscles into the operation to assist the arm. The chair can be tipped backward slightly for maxillary extractions. The present day contour chair has the patient in a semirecumbent position, which is ideal for oral surgery.

## **Preparation and Draping**

The operating light is turned on, the operation and the assistant scrub, and a sterile towel is placed over the paper napkin as the dentist admonishes the patient not to touch it. Since the towel is sterile, gauze sponges or instruments can be placed on it. If a complicated exodontic procedure is planned or if the patient manifests anxiety, another sterile towel is

placed over the eyes from behind the head and fastened with a sterile pin or towel clamp over the forehead. The operator and assistant may place sterile towels over their uniforms, fastening them with sterile towel clamps. The exposed portion of the patient's face is wiped with sponges dipped in benzalkonium chloride, 1:10,000 solution.

A 7.6 by 7.6 cm gauze sponge is placed in the mouth so as to isolate the operative field. The sponge allows the field to be dried, it keeps the tongue out of the way, it absorbs saliva and blood, it prevents teeth and fragments from slipping into the posterior pharynx, and it keeps the patient from leaning over the bowl to spit, which wastes time. If a continuous suction technique is chosen, the gauze sponge may or may not be used.

### **Position of Left Hand**

The fingers of the left hand serve primarily to retract the soft tissues and to provide the operator with sensory stimuli for the detection of expansion of the alveolar plate and root movement under the plate. It is for these reasons that one finger is always placed on the labial or buccal alveolar plate overlying the tooth and another finger retracts the lip or tongue. A third finger or the thumb helps guide the forceps into place on the tooth and protects teeth in the opposite jaw from accidental contact with the back of the forceps if the tooth loosens suddenly. In mandibular extractions, equal and opposite torquing force must be provided by the left hand to counteract the forceps placed on the mandible by the extracting forceps in the right hand so that temporomandibular joint pain and injury do not occur. Each extraction and each type of forceps require different left-hand positions to accommodate the positions of the right hand, which holds the forceps.

### **Forceps Extraction**

A sharp No 2 Molt curet is used to check the anesthesia. Then it is slid around the free gingival cuff to sever the gingival attachment of each tooth to be extracted in that quadrant. No force should be employed since this will alarm the patient.

The forceps are brought from the Mayo stand behind the patient, shielded from his view as much as possible, and guided into the mouth with the help of a finger or thumb of the left hand. The palatal or lingual beak is placed first, followed by the buccal or labial beak. The long axis of the forceps must be placed parallel with the long axis of the tooth. Failure to accomplish this is the most common cause of fractured teeth. (Use of the wrong anatomical forceps, such as a molar forceps on a premolar, is another common cause for fracture.) Pressure is placed toward the apex of the tooth to "set" the forceps the cemento-enamel junction.

Enough pressure is placed on the handles to hold the forceps on the tooth without slipping, but uncommon force may shatter a weak tooth. The forceps should be held near the ends of the handles to obtain the maximum mechanical advantage. No greater delicacy of touch is obtained by holding the forceps midway up the handles. In furniture factories, when an apprentice holds the hammer halfway up the handle, an old foreman takes it from him and cuts off the portion he was not using. This is a lesson he learns early, and he can hardly wait until evening to purchase a new balanced handle.

Each tooth requires a separate series of movements for extraction, which are described.

## **Postextraction Procedure**

After the extraction, all loose bone spicules and portions of tooth, restoration, or calculus are removed from the socket as well as from the buccal and lingual gutters and the tongue. If pathological tissue is present in the apical region, it is removed carefully with a small curet. The granulation tissue "velvet" is removed or broken up, but the bone is not scraped. This is *not* done in the maxillary incisor area because the veins here have no valves; consequently, infected material and thrombi may ascend into the cranial cavity to form a cavernous sinus thrombosis. If a recent radiograph does not show apical radiolucency, it is wise not to put a curet into any socket, since this will only inoculate the socket with organisms and debris from the free gingival margin if the original curet is used.

The socket must be compressed by the fingers to reestablish the normal width present before the plate was surgically expanded. In the case of multiple extractions, the sockets can be overcompressed by one third, which will eliminate the need for alveoloplasty in many borderline cases. Sutures usually are not necessary unless the papillae have been incised.

The socket is covered with a 7.6 by 7.6 cm gauze sponge that has been folded into quarters and moistened slightly at its center with cold water. This is done to prevent hemorrhage from the socket from penetrating the gauze at that point, which would be torn away from the remainder of the clot when the gauze is removed, resulting in new bleeding. The side of the gauze placed over the wound is not touched by the operator for aseptic reasons. When the covering sponge is in place, the sponge originally placed over the tongue is removed. Saliva and debris are kept out of the socket by this method. The patient is asked to bite down on the sponge for 5 minutes.

After that time has elapsed, a postoperative radiograph is made for legal as well as professional reasons and another moistened sterile sponge is placed, to be retained until the patient arrives home. Few cases of postoperative hemorrhage will occur if this procedure is followed. A printed instruction sheet is given to the patient, together with a prescription if pain is anticipated. Analgesic drugs should be started as soon as the patient returns home, well before the local anesthetic effect disappears. An appointment for postoperative examination is given.

## **Number of Teeth to Be Extracted**

Many variables exist in the health and fitness of the patient in addition to the condition of his teeth and their surrounding structures. The planned procedure may involve complicated extractions and alveoloplasty, which may take a considerable length of time and result in a loss of blood of up to 500 mL. In the uncomplicated case the remaining posterior teeth in the maxilla and mandible on one side can be removed in one visit. If an immediate denture will not be made, occasionally the mandibular canine will be removed too, so that an infiltration anesthetic can be given to remove the incisors later.

Further surgery is done no earlier than 1 week afterward, at which time swelling and discomfort have disappeared, and the white cell count has returned to normal. The posterior teeth on the opposite side are removed 1 week later. The anterior teeth are removed after another week, or whenever the posterior wounds have healed well.

## Order of Extraction

The order of extraction is important. Since anesthesia becomes effective in the maxilla earlier, the maxillary teeth are extracted first (with the exception of impacted teeth). Also, debris such as enamel or amalgam fragments cannot be lost in open mandibular sockets. The most posterior teeth are removed first for better vision, since hemorrhage collects in the posterior region. In a mouth containing teeth that are difficult to extract, the first molar and canine teeth are extracted after their adjacent teeth are removed so that better purchase can be made on the tooth and so that advantage can be taken of earlier plate expansion resulting from adjacent extractions. These two teeth are encased in the so-called bony pillars of the face. Accordingly, the third molar, second molar, second premolar, first molar, first premolar, lateral incisor, and canine would be extracted in that order in difficult cases.

If a tooth or a root should break, it is best to stop and recover the root before proceeding to the next extraction. Consequently, the adjacent socket does not produce hemorrhage that obscures the field, and the location of the root is not lost. If there is a good possibility that adjacent teeth may break or if an alveoloplasty will be necessary, the operator may continue with the extractions, making careful note of the location of the root, and then design the surgical flap to accommodate the problem or problems that need attention.