

# ***Contemporary Atraumatic Oral Surgery for General Dentists Getting it Right, So Things Don't Go Wrong***

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## **Topics Covered in the Lecture:**

- Proper Patient Evaluation, Medical, Clinical Record Keeping
- Check Lists eg. CRABP
- Luxators, Periotomes, Instrumentation, Forceps, PowerTome
- Concepts
- Surgical Extractions, Sectioning of Teeth, Proper Instrumentation
- Surgical Flap Designs
- Bisphosphonates
- Local Anaesthesia
- 3rd Molar Surgery—Instrumentation, Techniques, Flap Design
- Suturing
- Surgical Complications eg. Broken Roots, Sinus Perforation
- Post Op Complications eg. Dry Socket, Paresthesia, etc.
- Analgesia and Pain Control

## **AN AIDE MEMOIRE FOR THIRD MOLAR AND MINOR ORAL SURGERY**

All surgical procedures carry an inherent risk and no absolute guarantee can be provided in any circumstance. The greater the degree of difficulty generally increases the risk of complications. The need for appropriate radiographs and the ability to assess one's own experience, leading to the need for referral to a specialist, is an essential aspect of the diagnosis and duty of care owed to the patient.

### **Surgical Technique**

The surgical technique for third molars and other teeth will often involve:

- Provision of anaesthesia, either general or local, with or without sedation
- Incisions and raising of mucosal flaps to gain access to the tooth or teeth
- The removal of bone
- The dissection of teeth to facilitate their removal
- The closing of wounds with sutures
- The prescription of analgesics and occasionally antibiotics prior to, during and after the surgery

### **Common Minor Oral Surgery Complications**

- Pain
- Swelling
- Hemorrhage
- Trismus
- Bruising

## **Less Common Minor Oral Surgery Complications**

### **Paraesthesia**

- Damage to the temporomandibular joints, jaw fracture
- Damage to adjacent teeth, including restorations and periodontal tissues
- Retained roots
- Displacement of roots and teeth into the maxillary sinus, pterygoid, sub-lingual and sub-mandibular spaces
- Oro-antral fistula
- Infections
- Dry Sockets
- Osteomyelitis

The need to refer to a specialist may become apparent throughout the course of surgery due to one or more of these complications, or you may refer the patient from the outset. The responsibility for payment of the specialist's fees is that of the patient.

### **Alternative Treatment**

- Nothing – Sometimes a preference by patients based on prognosis. The risks of non-treatment including recurrent infections, more serious health complications and further pathology should be noted in the patients treatment record including and refusal to be referred to a specialist.
- Endodontics
- Decoronation and submersion of vital roots

### **Further Explanatory Notes: Common Complications**

- **Pain** – A normal consequence of tooth extraction which usually climaxes within 48 hours of the surgery and subsides as swelling reduces and healing is completed.
- **Swelling** – Occurs immediately after extraction and reaches a maximum usually within 48 hours and is usually self-limiting. Most swelling has subsided after a week to ten days and is minimized by rest and the use of ice packs on a two hourly basis for the first 24-48 hours after surgery.
- **Hemorrhage** – It is not usual for a small oozing of blood to occur over ensuing days after surgery. Trauma to wounds (i.e. toothbrush abrasion or the ingestion of hard foods) is the most common cause. If occult bleeding occurs, the patient should be advised to firstly bite down on a clean gauze swab and apply ice pack for ten minutes. If bleeding does not abate the patient should seek immediate assistance from their dental or oral surgeon.
- **Trismus** – Initial inability to open the jaw is a normal sequelae of oral surgery and may last until two to three weeks before normal jaw opening is attained, It is due primarily to muscle spasm and swelling, and is usually resolved without any further intervention.
- **Bruising** – May develop in the cheeks, lips, neck and rarely the chest and shoulders. It is generally self-limiting and resolves naturally in about two weeks. It, along with swelling is abated to some degree with the use of ice-packs.

### **Less Common Minor Oral Surgery Complications**

- **Paraesthesia** – Damage to sensory nerves is possible, but generally rare. In the case of mandibular molar and premolar extractions, the inferior alveolar dental nerve (supplying feeling to the lip, mental region and teeth of that side), the lingual nerve (supplying feeling to the lateral aspects of the tongue), and the long buccal nerve (supplying feeling to lower cheek and gums) may be damaged and symptoms include total numbness, burning, itching, tingling and pins and needles sensations. In regard to maxillary teeth, the greater palatine (supplying sensation to the posterior two thirds of the palate) and the lesser palatine nerve (supplying

sensation to the anterior third of the palate) may have similar symptoms within their distributions. Fortunately, most of these skills and taste is not a consequence of damage to these nerves. Damage to the lingual nerve may also cause altered taste perception.

- **Damage to the temporomandibular joints** – Whilst rare, some patients may complain of jaw joint pain, clicking and altered occlusion. In severe cases the need for further treatment and jaw joint surgery may be required.
- **Jaw fracture** – Whilst very rare this may occur both pre and post-operatively. It may be associated with underlying and undiagnosed medical treatments or a consequence of the tooth and bony anatomy of the patient. Further surgical intervention including jaw wiring and pinning and plating is sometimes warranted.
- **Damage to adjacent teeth, including damage of existing restorations and periodontal tissues** – The complication of damage to adjacent teeth is generally rare and usually occurs in teeth that have been extensively restored, ensuing in the need for further restorative work being required. Periodontal problems may eventuate when extensive associated pathology like recurrent infections, cyst or bone resorption caused by an impacted tooth, or when dry sockets have occurred post operatively. Periodontal problems will include recurrent periodontal abscess and tooth hypersensitivity to temperature, air, occlusal contact and masticatory force, sometimes requiring further dental treatment.
- **Retained roots** – Occasionally roots of teeth to be extracted may fracture, especially in the case of very curved and fine root types. Whilst most are easily retrieved, occasionally they cannot be found, or the task of removal increases the risk of more serious complications. Rarely, so retained roots cause further complication, but if so, their removal at a later date and referral to a specialist maybe warranted.
- **Displacement** of roots and teeth into the maxillary sinus, pterygoid, sub-lingual and sub-mandibular spaces – Maxillary molars may be displaced into either the pterygoid space or the maxillary sinus. In the case of either of these events occurring, and the inability to retrieve them at the time of surgery, referral to a specialist is imperative. Similarly, the other maxillary molars and premolars and

their roots maybe displaced into the maxillary sinus requiring further surgery. The greatest risk of not retrieving displaced teeth in the circumstances is infection. In regard to mandibular teeth, especially third molars, there is a very rare risk of displacement into the sub-lingual and sub-mandibular spaces with very similar risks of post operative infection.

- **Oro-antral fistula** – A rare complication of maxillary posterior tooth extractions, symptoms include chronic sinusitis and regurgitation of foodstuffs and drink through the nose , as well as air escaping into the mouth when blowing the nose, Whilst many may heal spontaneously, further surgery is often warranted.
- **Infections** – Post operative infection occurs from time to time and may take several weeks or months to evolve. They may be due to previous infections of the surgical site, dead bony spiculums, tissue reaction to suture materials, and food impaction. Normally a course of antibiotics and drainage is curative.
- **Dry sockets** – These occur more commonly in lower jaw extractions and in female patients, as well as those who smoke tobacco. Generally, the more difficult the extraction, the greater the risk of this complication occurring. Whilst the exact etiology is unknown, what occurs is that the blood clot that normally fills the extraction socket is lost within the first 24 to 48 hours after surgery. Symptoms include fetor oris, a bad taste and pain that are recalcitrant to normal analgesia. Healing is delayed and may take several weeks to months prior to a satisfactory outcome. Pain is controlled by the placement of an analgesic dressing directly into the extraction socket. There is a very small risk of a permanent defect or loss of periodontal tissue occurring with adjacent teeth, which may require further surgical treatment.
- **Osteomyelitis** - An exceptionally rare complication of minor oral surgery, but is a potential problem with immuno-suppressed patients and those that have undergone head and neck radiotherapy or take medications such as bisphosphonates. Surgical treatment, hospitalization and extensive antibiotic therapy are often warranted.