TOOTH EXTRACTION

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Oral and maxillofacial surgery involves the **diagnosis and management** of **diseases** , **injuries**, and **defects of the human mouth and jaws**, **face** and **associated structures**.

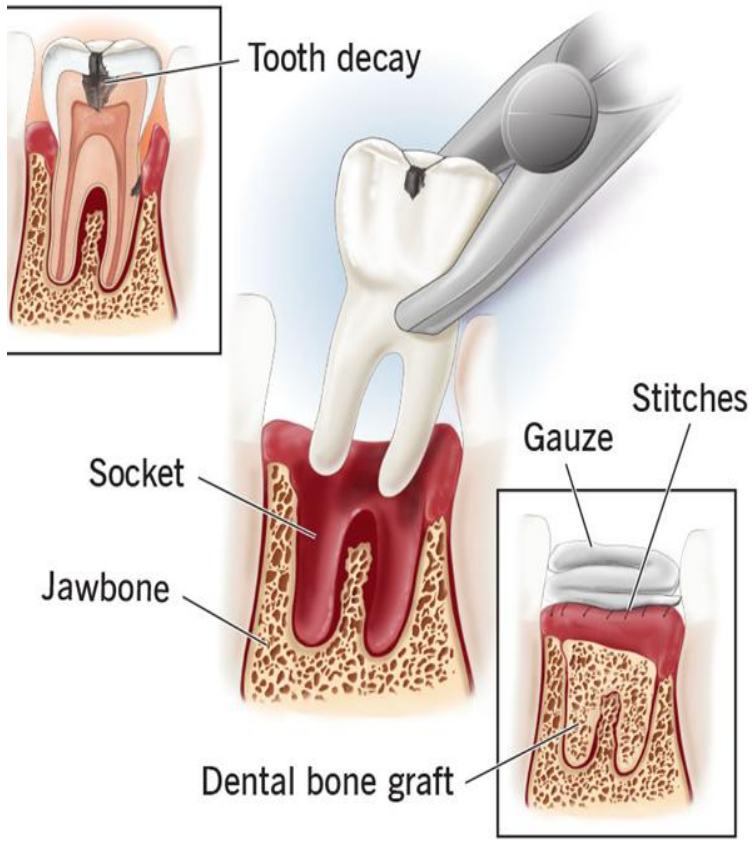
In most countries , the speciality of oral and maxillofacial surgery has earned the respect of and acceptance of both the medical and dental professions.

Oral surgery is that branch of dentistry which deals with the diagnosis , prevention and\ or treatment of disease of the oral cavity.

The branch of oral surgery now has moved from simple extractions to complex surgeries . the oral surgeon is now referred to as a maxillofacial surgeon. There are no sharp lines separating the maxillofacial surgeon from an ENT or a plastic surgeon and therefore many of us are referred to as ”**craniofacial surgeons**”

What is a tooth extraction?

A tooth extraction is a dental procedure during which your tooth is completely removed from its socket. Sometimes, people refer to this as “pulling" a tooth
Also referred as “Exodontia”.



Tooth extraction :

The ideal tooth extraction is the painless removal of the whole tooth or roots from its socket with **minimal trauma** to the investing tissues , so that the wound **heals normally** with no post operative **prosthetic problem** .

Taking patient's History is very Important

Medical history: Determination of health status. Any modification of routine procedure.

Dental history (history of difficult extraction) , Patient's emotional maturity: Level of anxiety

Clinical examination , Radiographic examination

A patient may give a history of previous difficult extractions, anxiety or wound healing problems
They may describe medical factors interfering with their fitness to undergo the procedure unde
local or general anaesthesia, such as **severe ischaemic heart disease**. **Valvular heart disease** an
anticoagulation therapy require **special precautions**.

Some medical factors indicate risks of local problems (e.g**. leukaemia and risk of infection**, o
osteogenesis imperfecta and **risk of fracture**).

REMEMBER ALL THE TIME :

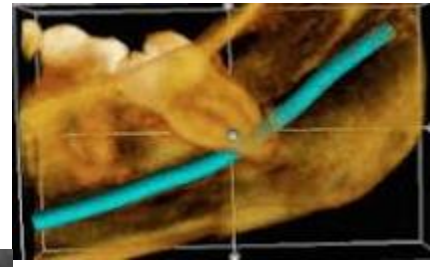
Before doing the extraction the operator should have knowledge/competencies in the following areas:

- anatomy (including radiographic features) of structures surrounding the teeth (including the periodontal ligament)
- root morphology (including common variations)
- **the relationships of roots to the maxillary antrum, inferior alveolar nerve and mental foramen**.

(a)

(b)

If you think that you are not well equipped in these areas, revise them before starting the extraxtion



CLINICAL AND RADIOGRAPHIC ASSESSMENT

Not all extractions are straightforward; sometimes teeth fracture or there is risk of damage to adjacent structures during the process. It is important to attempt to evaluate, before the extraction, the likely degree of difficulty and the chances of adverse events.

This maximizes the chance of things going according to plan.

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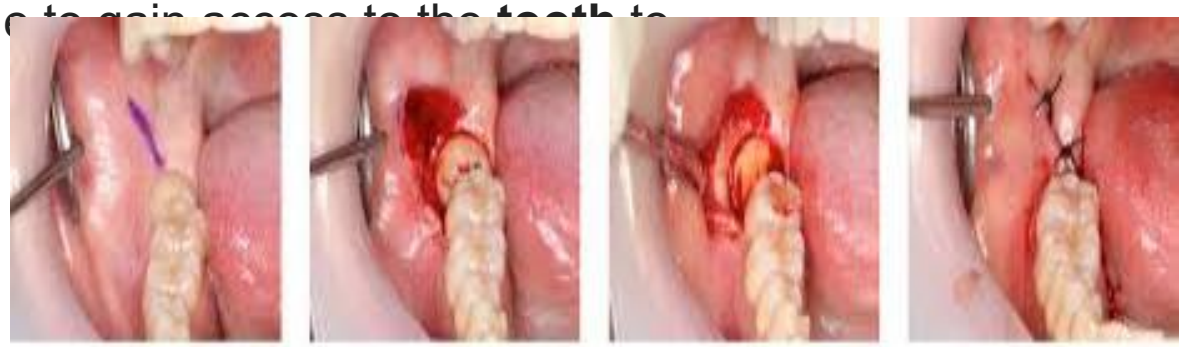
TYPES OF TEETH EXTRACTION

Removal of a tooth is a surgical procedure, which may be accomplished with forceps, elevators or a transalveolar approach.

- Extraction is irreversible and occasionally associated with complications. It should be employed only when all alternative treatments have been excluded.
- However, on occasion, teeth must be extracted and extraction is part of the function of the dental practitioner.
- Extractions may pose various problems and it is wise to anticipate difficulty and prepare for it

There are two main **types of dental extraction**,
simple **extraction,** and
surgical **extraction(Translaveolar extraction)**.

In simple **extraction** by using forceps and/or elevators, while the surgical **dental extraction** typically requires an incision into the connective tissue to gain access to the tooth to be remove.



a. b. c. d.

EXTRACTION OF TEETH :

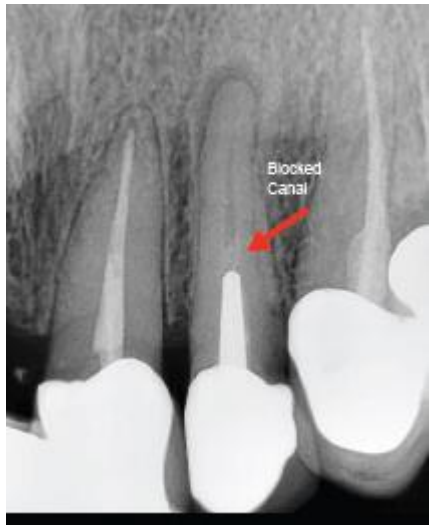
The extraction of teeth is a commonly performed operation that can be a simple task.
It may however rely on a high degree of skill to be accomplished successfully in all cases.
Success depends on understanding both the morphology of teeth, or more exactly their roots, and the anatomy of the supporting tissues and associated structures, together with the vascular and nerve supply.
Careless technique can create problems for future replacement of missing teeth .
Advances in dental care and a more elderly population have resulted in patients maintaining teeth until the elastic qualities of their support are all but exhausted.
This creates special management problems for the performance of minor oral surgery

INDICATIONS FOR EXTRACTION OF TEETH

1-Caries

2-Periodontal disease

3-Pulp disease when endodontic treatment is not possible or has failed



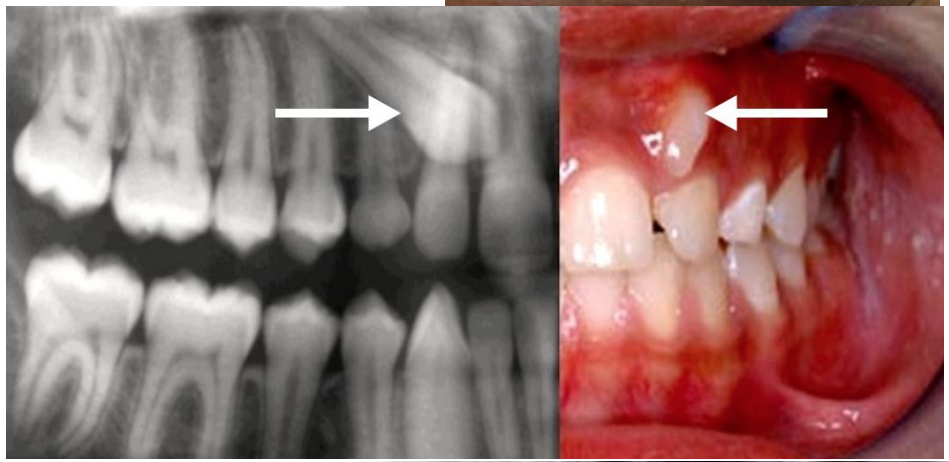
4-Pathologic lesions surrounding teeth

5-Crown and root fractures

6-Malposition of teeth

7-Supernumerary teeth

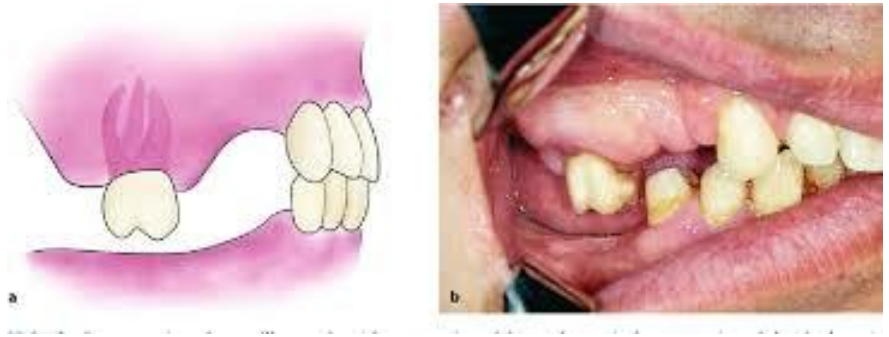
8-Impacted teeth



9-Orthodontic indications

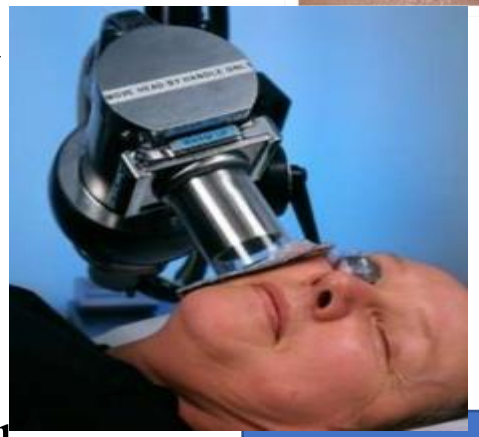
10-Teeth in bone fracture lines

11-Before prosthetic procedures



12-Before other surgical procedures

13-Before radiation therapy

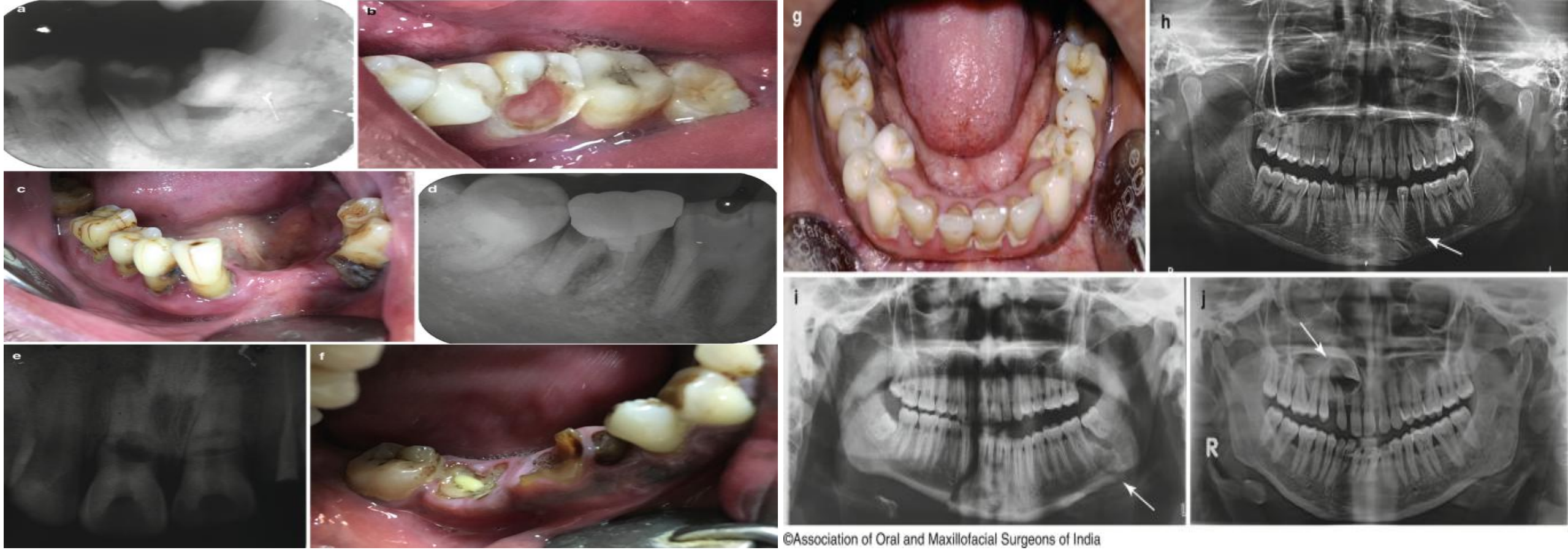


14-Before bisphosphonate therapy

15-Other reasons for extraction

SUMMARY OF INDICATION OF EXTRACTION :

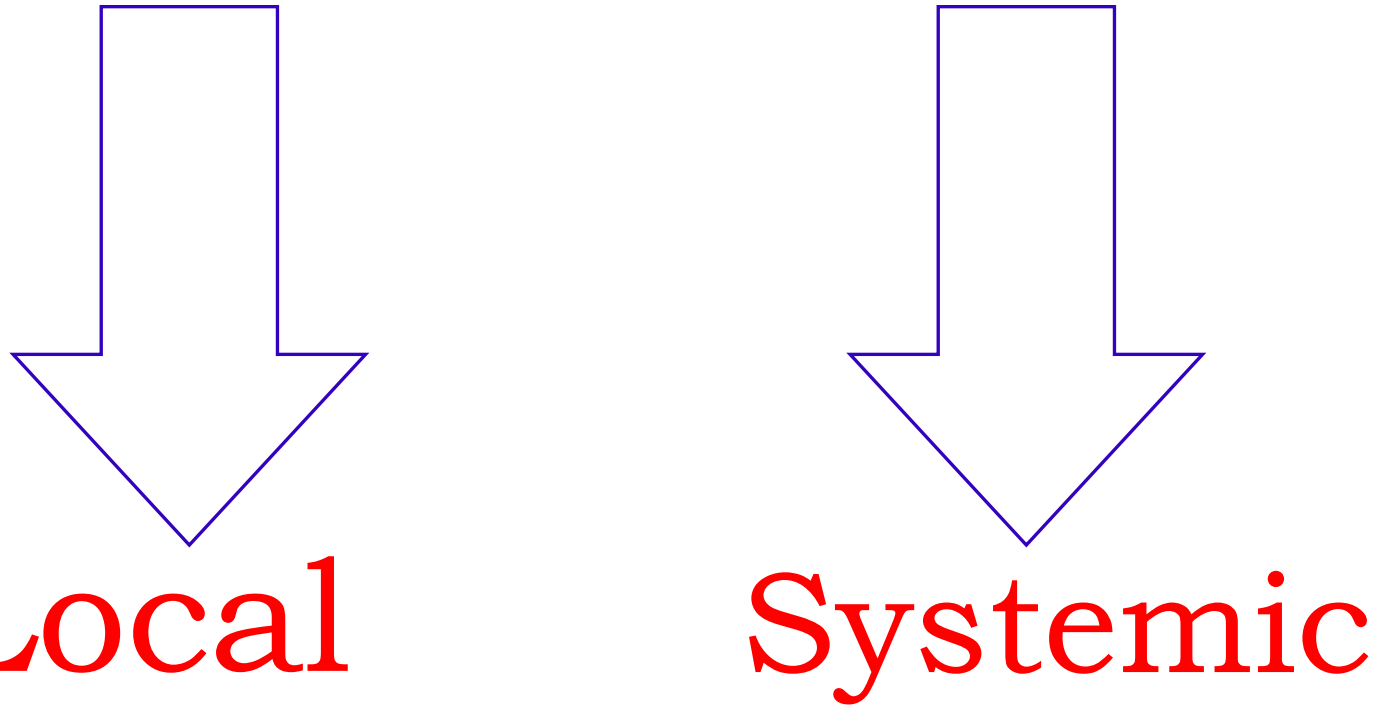
Severe caries.
Severe periodontal disease.
Pulp pathology.
Apical pathology.
Orthodontic reasons.
Prosthetic considerations.
Impacted teeth.
Supernumerary teeth.
Tooth in the line of fracture of the jaws.
Teeth in relation with pathological conditions.
Retained roots.
Prior to irradiation.
Focal sepsis.
Aesthetic.



(a)Intraoral periapical radiograph showing grossly carious second molar indicated for extraction. (**b**) Clinical Photograph showing pulpal pathology. (**c**) Clinical Photograph showing generalized periodontitis. (**d**) Radiograph showing developing root caries following endodontic treatment. (**e**) Radiograph showing fractured central incisors. (**f**) Clinical Photograph showing root pieces. (**g**) Clinical Photograph showing supernumerary teeth. (**h**) OPG showing impacted mandibular canine. (**i**) OPG showing left mandibular third molar in fracture line. (**j**) OPG showing cyst associated with impacted maxillary canine

Contraindications Of Extraction:

Contraindications for Dental Extraction

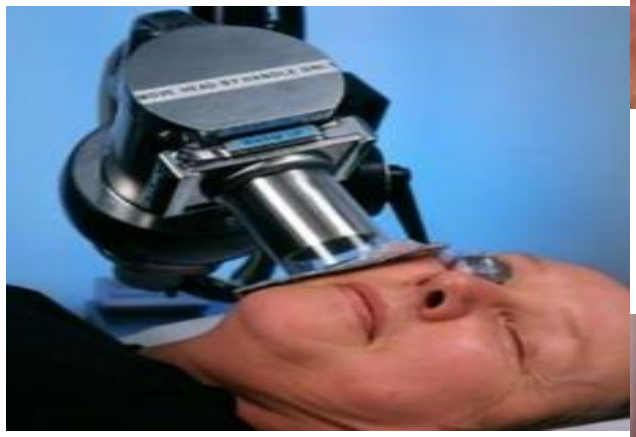


Local Contraindications

- ✓ **Absolute contraindication** Teeth associated with central haemangioma.

- ✓ **Relative contraindications**
- Teeth located within an area of tumor, especially a malignancy

History of therapeutic radiation for cancer



Severe pericoronitis around an impacted mandibular molar

Acute dentoalveolar abscess

- ✓ Acute infection - **Not a contraindication to extraction.**
- ✓ If access and anesthesia considerations can be met, the tooth should be removed as early as possible

A

B

C

Systemic contraindications

•Cardiovascular problems

•Uncontrolled hypertension

•Unstable angina pectoris

•Recent myocardial infarction

•Uncontrolled cardiac dysrhythmias

•Uncontrolled metabolic disease
•Brittle Diabetes
•Hyperthyroidism
•Osteoporosis
•End stage renal disease with severe uremia

•Malignant disease
Leukemia
Lymphoma

•Blood dyscrasias
Anemia
Hemophilia
Hemorrhagic purpura
Polycythemia
Platelet disorder.

•Patients on medication should be treated with caution
•Corticosteroid therapy

•Pregnancy is considered a relative contraindication

Summary of contra indication of teeth extraction:

1-contra indications for extraction systemic medical difficulties may require the extraction to be postponed,or it may have to be completed if the patient is acutely at risk.

2-contraindications • in acute situations any procedure should be done under controlled environment such as operation theatre with close monitoring by anaeshesian. so that there should not be any risk during the procedure. • there are systemic & local contraindications which has to be taken into consideration before extraction.

3-contra indications of extraction systemic ci severe uncontrolled metabolic situations such as: -un controlled diabetes -hyper thyroidism -osteoporosis -end stage of renal disease with uncontrolled uraemia local ci -serious local ci is previous radiation treatment in that area which requires tooth exraction. orn is likely to develop,however hbo, may be helpful. -geriatric patients -chronic drug therapy -nutritional considerat

4-contra indications • malignant diseases -leukaemia,lymphoma there is increased risk of infection & bleeing *cardiac diseases: -uncontrolled or events such as myocardial infarction or stroke in the past 6 months. -changes in the tissue. increasedcalcification of bone inthe ealderly as the bone is brittle.fracture of alveolus or even entire jaw.

5-contraindications • pregnancy: -can be considered as relative contraindic 1st &3rd tremister should defer treatment. -2nd tremister extraction can be completed. extensive treatment should be defered until after delivery. -consider medicolegal conditions it’s safe to treat only acute condtn & delay elective procedure until after delivery. • extraction of teeth associated with tumor can be problematic whether the tumor is benign or malignant. • if the teeth associated with the tumor are improperly treated, it results in recurrence of the tumor & cause further damage to adjecent tissues & structures

6-contraindications • blood dyscrasias: -hemophillia or other platelet disorders and those who are on anticoagulants from oral to heparin.this provide systemic anticoagulation and control of bleeding at extraction site. • in case of known malignant tumors,no teeth should ever be removed,as surgical innervation could cause the dissemination of cells and metastatic process. • acute pericoronal abscess/pericoronitis. • involving partially erupted teeth.
7-contraindications • patients on steroids. • rheumatic fever in childhood,is often forgotten by the patient.extraction could effect the heart. • in acute pericoronal abscess, inflammation of surrounding tissue, treatment should be delayed because of bacteraemia & diffuse of infection. • as the patient with severe pain dosen't have food patient should be hydrated first. • severe acute abscess, ludwig's angina.

Pre-extraction health evaluation.:

In evaluating a patient for any surgical procedure, surgeons must consider two aspects:
(1) the necessary workup that must be performed for the surgical procedure itself, and
(2) whether the patient can safely undergo the planed surgical procedure.
In the **preoperative evaluation of a patient for oral surgery**, regardless of the clinical setting, a good medical history is undoubtedly the most important aspect. **A detailed medical history** will identify potential management problems (physiologic and pharmaceutical) and allow the dental surgeon to formulate an oral surgical treatment plan in light of the medical status. Patients will present with one or multiple established medical diagnoses, which may alter how dental care is delivered.
The role of the dentist is to determine how these medical problems will influence care, or how dental care may affect medical treatment.

Medical illness may predispose to acute physiologic decompensation under stress or failure to do well posttreatment, or lead to drug interactions.

Dentists must be aware of what potentially can occur and what precautions **must be taken to minimize risks**.

They must identify issues that **should addressed pretreatment** (eg, **insulin, warfarin**, **aspirin** use), such as illnesses that may **cause physiologic decompensation during surgery** (eg, **angina, seizure disorders**, **asthma**) and conditions that may affect the **posttreatment phase** (eg, **diabetes** [infection and delayed wound healing], **aspirin use [impaired hemostasis])**

Disease	Suggested Preoperative Evaluation
Allergies	Allergies to drugs or latex should be determined
Asthma	Emotional factors may trigger an attack Evaluate wheezing and do not treat if patient is wheezing Have rescue inhaler available Do not prescribe nonsteroidal anti-inflammatory drugs or aspirin for pain if the patient has aspirin-induced asthma
Cerebral vascular disease	Evaluate blood pressure No elective oral surgery within 6 months of the cerebrovascular accident Patients who have had a stroke are usually on anticoagulation therapy; if so, review method and obtain satisfactory recent International Normalized Ratio (INR) from physician
Chronic obstructive pulmonary disease	Only the most severe respiratory compromise is a contraindication to routine outpatient dental/oral and maxillofacial surgical care with local anesthesia Determine the patient's functional capacity (eg, able to walk a block or two on level ground at 2 to 3 miles per hour [mph]; climb a flight of stairs [five metabolic equivalent tasks]) Plan on not performing long or extensive surgical procedures and do not administer 100% oxygen if the patient is suspected to be on carbon dioxide drive

Coagulopathy	Consult hematologist for individuals with definitively diagnosed coagulopathies In the absence of a history of bleeding diathesis, abnormal bleeding following exodontia is rare Prothrombin time or partial thromboplastin time is not indicated
Coronary artery disease	Stratify patients based on symptoms and exercise capacity according to history Determine the patient's functional capacity (eg, able to walk a block or two on level ground at 2 to 3 mph, climb a flight of stairs, do light house work) Patients who can perform these functions are at low risk for cardiac decompensation during oral surgery.
Diabetes mellitus	Diabetes is only associated with higher perioperative risks in vascular surgery and coronary artery bypass grafting Patients with well-controlled diabetes pose no problem Review symptoms such as excessive thirst, nocturia, malaise, and hunger to assess control
Epilepsy	Patients with well-controlled epilepsy are no different from average patients Review compliance with therapy
Hypertension	•• Stage 1: 140–159/80–99 •• Stage 2: 160–179/100–109 •• Stage 3: >180/>110 •• Stage 1: minimal risk •• Stage 2 and 3: delay nonemergency treatment until pressure can be controlled, attempting to decrease risk to stage 1 and 2 levels, respectively •• Stage 2: moderate risk of cardiac complication; emergency procedures only; infections •• Stage 3: high risk of cardiac complication
Liver disease	Screen for hepatitis B and C Patients being treated with Interferon for hepatitis C virus will be anemic and easily fatigued, and platelets may also be low Chronic severe liver disease

Medication	Medication history will provide information on what conditions the patient is being treated and how severe the condition may be Avoid drug interactions
Outpatient treatment with warfarin	Check current INR with treating physician Values of the INR at the therapeutic dose <3.5 does not significantly influence the incidence of postoperative bleeding Dental extractions can be performed without modification of oral anticoagulant treatment **INR of up to 3.4 is** acceptable for extraction of up to three teeth Local hemostasis with gelatin sponge and sutures seems to be sufficient to prevent postoperative bleeding
Renal insufficiency	Consult with **nephrologis**t if patient history is inadequate Compensated renal disease is not a contraindication to office oral surgery and simple extraction of teeth in the office under local anesthesia is not generally a problem For patients undergoing dialysis: perform oral surgery on nondialysis day to avoid problems with anticoagulation In emergency: treat patient more than 4 hours after dialysis; do not use penicillin with potassium (Pen VK) because K^+ is difficult to eliminate through dialysis and may cause electrocardiogram changes

Major Heart Diseases to be Treated in Hospital Setting	**Heart Diseases That May be Treated in Office Setting**
Myocardial infarction **within 6 month**; delay surgery if possible; consult with cardiologist Unstable or severe angina (class III or IV) Decompensated heart failure (class III or IV; ejection fraction <30%) Significant arrhythmias	Previous myocardial infarction (**more than 6 months** prior); determine the patient's functional capacity. Mild angina pectoris (class I or II) Compensated or prior heart failure (class I or II) Low functional capacity (eg, inability to walk three city blocks)

Review of the dental history

should reveal the patient's reason for **seeking oral surgery,** because the procedure will be **irreversible**. The patient's previous experience with oral surgery should also be determined because this will aid in the decision to use **sedation** and in **determining how to manage postoperative pain**.

Surgeons should get to know the patient; the old adage "**never treat a stranger**" should be applied to the normal preoperative evaluation.

The preoperative evaluation for oral surgery will almost always require imaging studies for proper diagnosis and treatment planning.

A panographic radiograph is the gold standard, because it will show the entire dentition of both jaws and adjacent structures, and will permit early and accurate identification of dental aberrations and disease.

Other radiographs that could be needed are periapical films for endodontic surgery or to provide greater clarity of detail; localizing films for issues such as impacted canines; and cone beam CT three-dimensional radiographic imaging for implantology or pathology cases.

The initial evaluation should help the **general dentist decide on the complexity of the procedure** and whether the case should be referred to an oral and maxillofacial surgeon.

Both the clinical and radiographic examinations should inform the operator if a tooth extraction will be possible through simple forceps delivery, whether the tooth should be sectioned for ease of removal, or whether a surgical flap is necessary

5 Reasons for Tooth Extraction

A patient has **two sets of teeth – milk teeth and permanent teeth**. Milk teeth are the first set of teeth that the body produces. When these set of teeth fall off, the second set of teeth which are the permanent teeth replaces the milk teeth.

Permanent teeth are meant to last a lifetime. However, teeth extraction may be necessary for the following instances:

1. Irreparable tooth damage due to severe decay

This happens when tooth decay reaches the center of the tooth which is the pulp. The bacteria produced by the *decay can invade the pulp and cause an infection*.In which case, a root canal procedure may help treat the infection. However, if the infection is severe, **extraction may be performed to avoid the infection from spreading**.

2. Periodontal disease is an infection of the gums, periodontal ligaments, alveolar bone and other structures surrounding the teeth. The earliest stage of periodontal disease is **gingivitis** which is an infection of the gums. The more severe kind of **periodontal disease *affects the periodontal ligaments and the alveolar bone*.**

Periodontal disease is caused by a bacteria in dental plaque which is a sticky substance that is formed on your teeth several hours after eating and without brushing. *Regularly brushing your teeth and visiting your dentist can help prevent periodontal disease*.

In some instances, a **periodontal disease may result in the loosening of a tooth**. When this happens, **tooth extraction is a possible dental option**.

3. Extraction may help an impacted tooth

A tooth is impacted when it is blocked from coming out, or when the gums did not fully erupt preventing the tooth to come out. This is usually the case for *wisdom teeth*.

Extraction of the impacted tooth *to prevent it from damaging other teeth*. Extracting an impacted tooth may also **help lower the risk of infection and overcrowding**.

4. To eliminate teeth overcrowding

The extraction of one or several teeth may be necessary to eliminate the overcrowding in the mouth. This is also recommended **when the patient has to undergo an orthodontic treatment** and there is no room for the teeth to move and realign.

5. Necessary after an accident

When an accident, like a car collision, happens and the patient requires dental treatment, the **first option is always to preserve the teeth**. Dental bonding, crowns, bridges or veneers may be recommended. However, *if the dental issue is dreadful, **a tooth extraction may be required.***

These are the reasons why a tooth extraction may be recommended to you. However, the goal is always **to preserve your existing teeth as long as possible**.

The Benefits of Tooth Extraction

•Help patient in getting rid of the pain. Patients frequently present to the dental office with a complaint of dental pain. ...

•Getting rid of the problem itself. An infection in the tooth can spread quickly, making treatment more difficult. ...

•Protecting the rest of the teeth.


Thank You!