HEALTH TECH ACADEMY

Oral and Maxillofacial Surgery

Surgical Techniques and Considerations

Lesson Objectives:

1. Identify key anatomical structures of the face and oral cavity
2. Discuss diagnostic procedures used in the maxillofacial specialty
3. Discuss specific elements of case planning for oral and maxillofacial surgery
4. Discuss pathology of the facial bones and oral cavity
5. List and describe common oral and maxillofacial surgical procedures

Oral and Maxillofacial (OMF) Surgery

Specializes in treating face and oral cavity diseases, defects, and trauma.

- **Maxillofacial Injuries Complexity:** Injuries involve skin, muscle, nerves, and blood vessels with long-term physiological and psychological effects.
- **Primary Causes of Maxillofacial Injury:** Motor vehicle accidents and interpersonal violence.
- **Timing of Surgery:** Performed when patient's general condition permits, early repair for better outcomes.

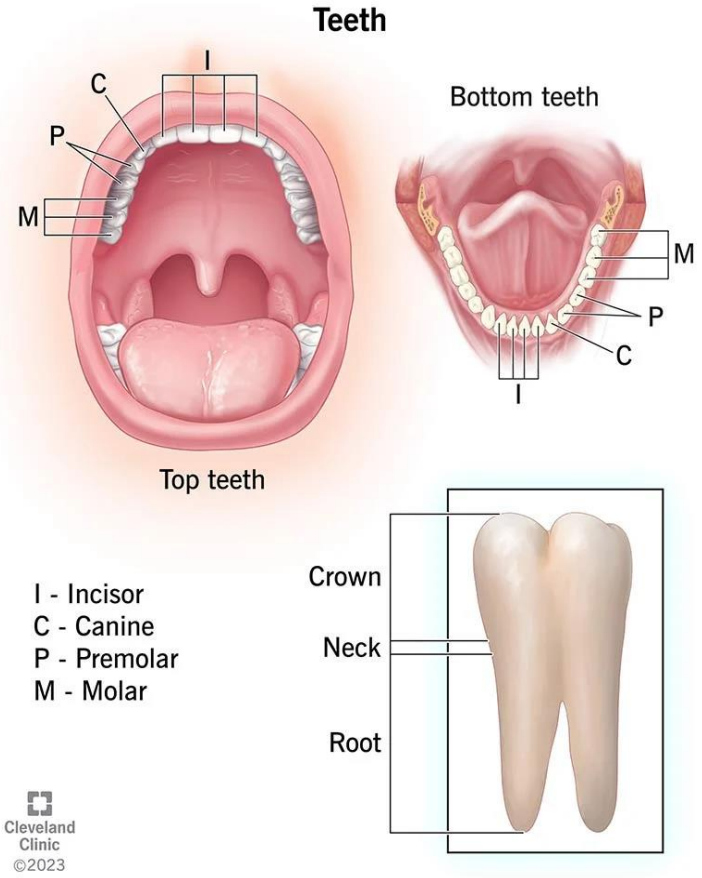
Preoperative Factors

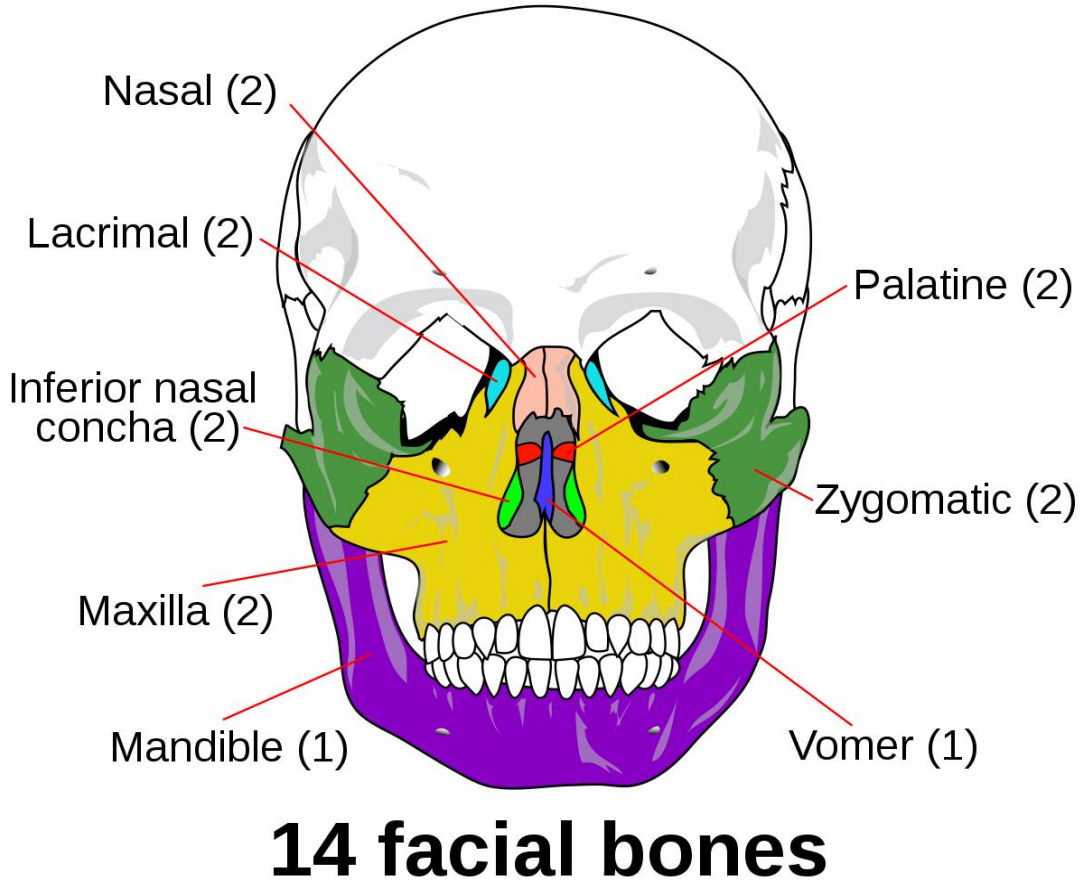
- Preoperative factors for patients undergoing oral surgery
  - Fear and concerns
    - Aesthetic outcomes
    - Pain
  - Special needs
    - Children
    - Patients already in the hospital for other concerns (e.g., transplant recipients)

Surgical Anatomy

- Understanding facial bone structure is essential for surgeries.
- **Bones of the Face:**
  - Divided into upper, mid, and lower regions.
  - Upper: Frontal bone; mid: Ethmoid, nasal bone, zygoma, maxillary bones; lower: Mandible.
- **Teeth:**
  - Situated in maxilla and mandible.
  - Two sets: primary (temporary) and permanent.
  - Layers: enamel, dentin, pulp; supported by periodontal ligament.

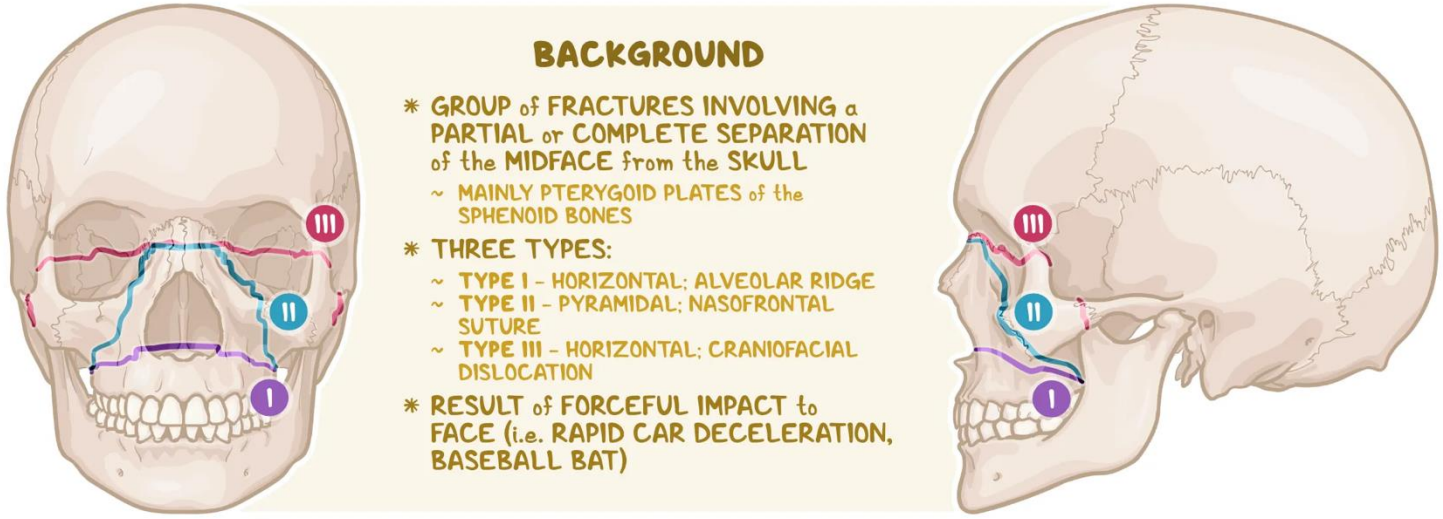
Anatomy


Teeth
I
C
P
M
Top teeth
Bottom teeth
M
P
C
I
I - Incisor
C - Canine
P - Premolar
M - Molar
Crown
Neck
Root
Cleveland Clinic ©2023


Nasal (2)
Lacrimal (2)
Inferior nasal concha (2)
Maxilla (2)
Mandible (1)
Palatine (2)
Zygomatic (2)
Vomer (1)
14 facial bones

Classification of Facial Fractures

- Le Fort I fracture
- Le Fort II fracture
- Le Fort III fracture



Diagnostic Tests

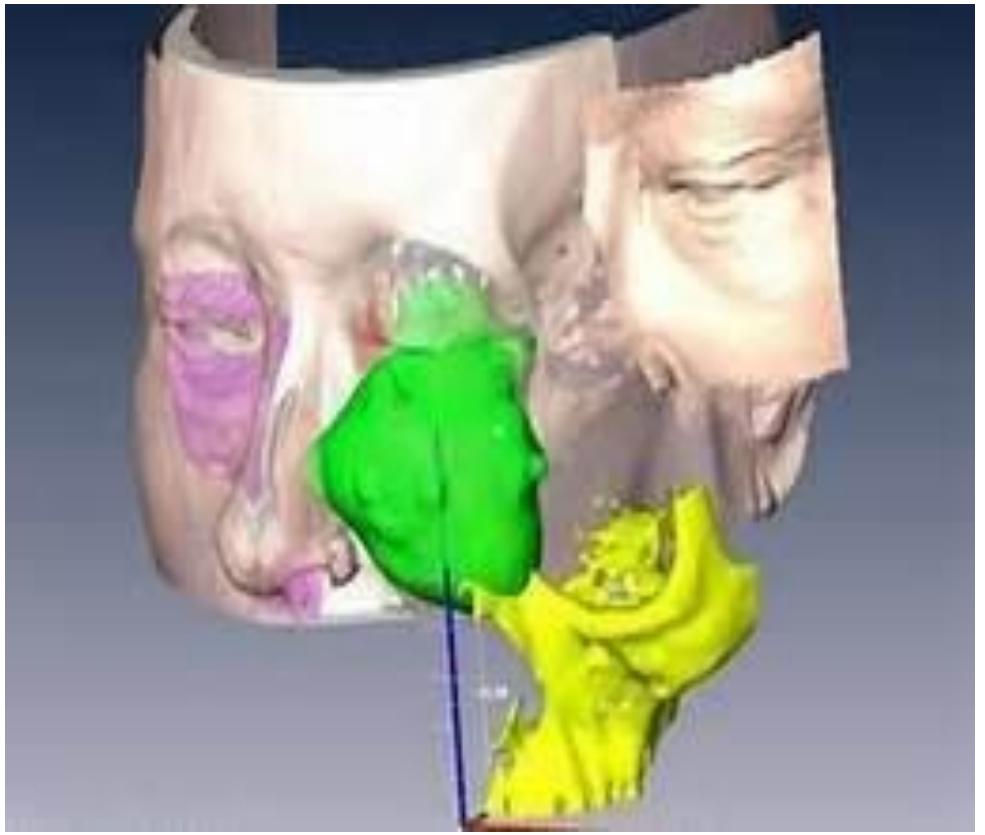
- Patient with possible maxillofacial defects
  - Physical examination should be done carefully
- Several types of imaging help diagnose maxillofacial fractures
  - Radiographic techniques
    - Computed tomography (CT) scans
    - Magnetic resonance imaging (MRI)

Diagnostic Tests (contd.)

- Plain films
  - Suspected type of fracture dictates the type of view or views to be taken
    - Waters view
      - Patient to sit or stand upright and hyperextend neck
    - Caldwell view
      - Similar to waters view; nose & forehead are placed against the cassette
    - Lateral facial view
      - Anatomic orientation of the face
    - Basal view
      - Zygomatic features
    - Panoramic
      - Shows the alvelor processes, mandible, posterior maxillary sinuses, and zygomas

Diagnostic Tests (contd.)

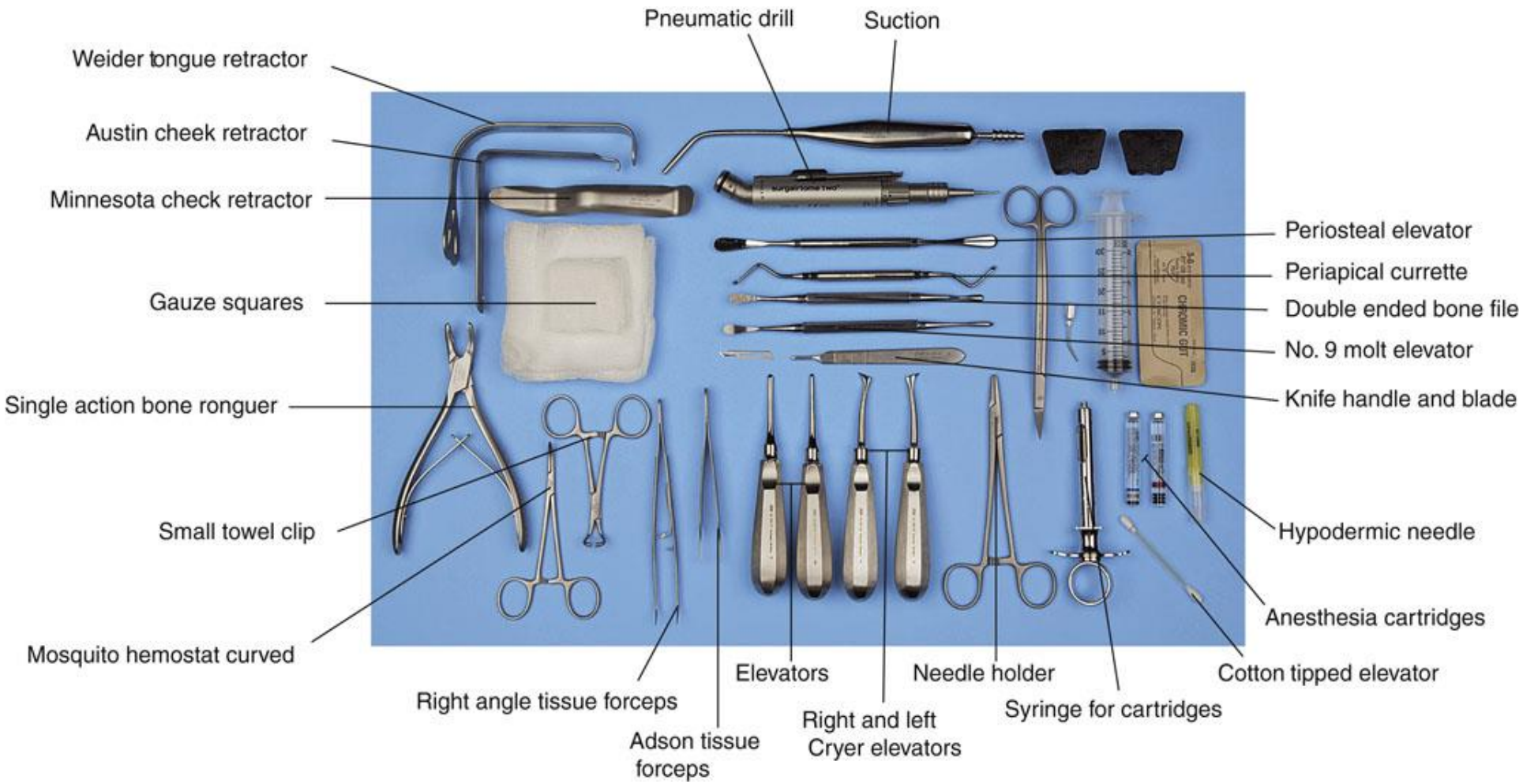
- CT scans
  - Show the facial structures in different planes
    - Hard palate
    - Mid-maxillary
    - Mid-orbital
- MRI
  - Best defines soft tissue injuries or congenital defects
  - Limited uses and time-consuming



Case Planning

- **Instruments:**
  - Specialized orthopedic instruments.
  - Plastic surgery tools for soft tissue repair.
  - Neurosurgery instruments for frontal bone involvement.
  - Eye and nasal instruments for ocular trauma.
- **Implants:**
  - Miniplates and mesh for fracture repair.
  - Customized instruments for implantation.
  - Color-coded systems for component identification.
- **Prepping and Draping:**
  - Facial prep with dilute povidone-iodine.
  - Draping to expose surgical site while protecting airways.
  - Specific considerations to avoid ototoxic antiseptics.
- **Sponges and Dressings:**
  - Dressings for wound protection and exudate absorption.
  - Antibiotic ointment application.
  - Use of Kerlix wrap for secure and conforming dressings.

Basic Extraction Tray



Common Surgical Procedures

- Open Reduction and Internal Fixation: Orbital Floor Fracture
- Maxillomandibular Fixation (Application of Arch Bars)
- Open Reduction/Internal Fixation: Midface Fracture
- Open Reduction and Internal Fixation: Mandibular Fracture
- Tooth Extraction

Watch the "Mandibular Fracture" Video

Mandibular Fracture Video

Mandibular Fracture Video

Summary of Video:

- ORIF – Open Reduction, Internal Fixation
  - Placement of fixation hardware

Watch the "Wisdom Tooth Extraction" Video

Wisdom Tooth Extraction Video

Wisdom Tooth Extraction Video

- Summary of Video:
  - Dental Instrument Trays
  - Dental Drill may be used
  - Teeth may be removed similarly for tooth decay

Read Chapter 27 from the E-Book

Read Chapter 27 from your E-Book to pass the upcoming quiz from **Surgical Technology - Elsevier eBook on VitalSource, 8th Edition.**

Click Here to read chapter 27!

Thank you!

Get ready for your quiz and rest of the activities now. Best of luck!

Congratulations!

Lesson 27 is complete.