FACIAL INJURIES

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- Facial trauma, also called maxillofacial trauma.
- AETIOLOGY:

Accident-road, industrial ,home,

Physical- Assault

Chemical- acid bath

Radiation

sport

iatrogenic-self inflicted trauma

- In developing countries, such as Nigeria, the leading cause of facial trauma is motor vehicle accidents.
- However, In developed countries, such as US, UK, INTERPERSONAL VIOLENCE is the leading cause of maxillofacial trauma.

- Facial trauma can involve hard and soft tissues
- Soft tissue injuries such as burns, abrasion lacerations and contusion (bruises)
- Fractures of the facial bones such as nasal fractures and the jaws

Soft tissue injuries

- Burn is a coagulative destruction of the skin caused by dry heat, electricity, chemical caustics and irradiation.
- An abrasion is a wound caused by friction between an object and surface of the soft tissue.
- Abrasions are usually painful because they involve the terminal ending of nerve fibers.
- Associated with minor bleeding
- Respond well with application of minor pressure

- A contusion is more commonly called a bruise
- Occurs when some amount of tissue disruption has taken place within the tissue which resulted into bleeding within the submucosa without any break in the soft tissue surface.
- Bleeding may either be from capillaries or artery
- No surgical treatment is instituted if the bleeding is from capillaries.
- Surgical exploration may be required if arterial bleeding is suspected

Laceration

A tear in the epithelia and subepithelial tissues

Most common type of soft tissue injuries.

May involve only the external surface

May also extend deeply into the tissue, disrupting the nerves, blood vessels, and other vital structures.

Surgical management involves four major steps;

cleansing, debridement ,haemostasis, and closure.

HARD TISSUE INNJURIES

- May involve the teeth and the alveolar sockets(Dentoalveolar structures)
- Facial skelectons

Dentoalveolar injuries

- It involves the dentoalveolar and perioral tissues
- Aetiological factors; fall, motor vehicle accident, altercation,child abuse.
- Classification of Dentoalveolar injuries;

Crown craze or crack; incomplete fracture of the crown without a loss of tooth structure

Horizontal or Vertical crown fracture; a) confined to enamel.b) Enamel & Dentine. C)enamel , Dentine & exposed pulp

Crown root involvement; a) no pulp involvement b) pulp involvement

Tooth mobility (concussion); injury to the tooth supporting structure, resulting in tooth mobility but without mobility or displacement of the tooth.

Avulsion; complete displacement of the tooth from its socket, may be associated with alveolar wall fracture.

Alveolar fracture

Management of dentoaveolar injuries depend on the types of fractures

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Treatment of dentoalveolar fractures

- Treatment options; composite filling,
- Root canal therapy
- Splint (reduction & immobilization)
- Re-implantation

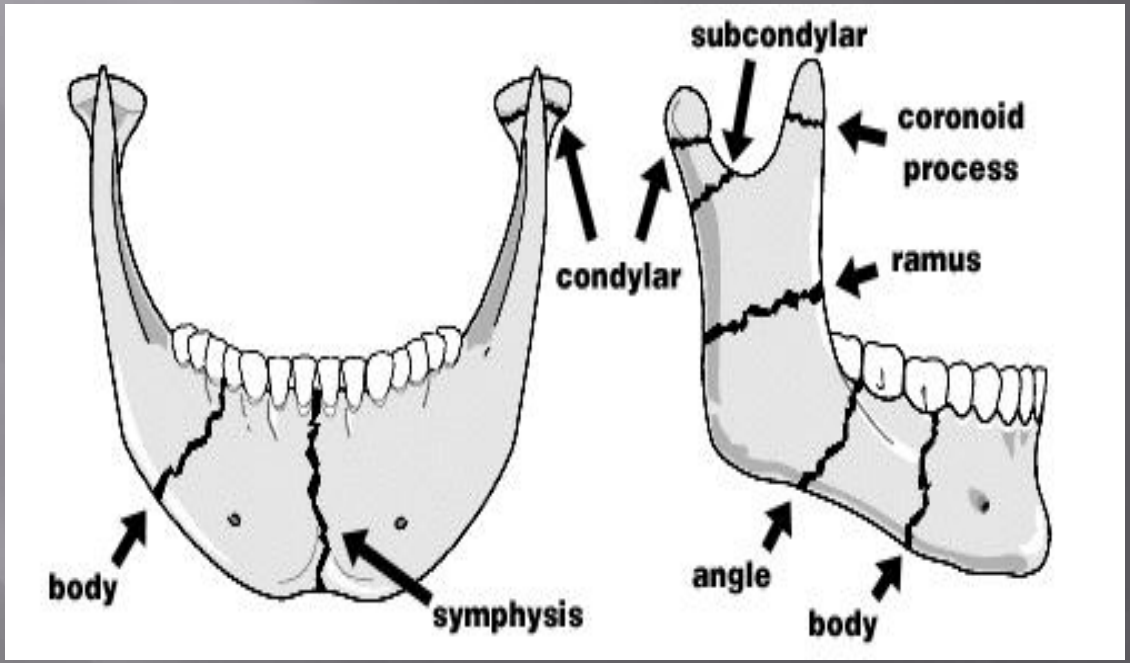
FACIAL BONE FRACTURES

- Classification; Mandibular fracture
  - Midface fracture

Mandibular fractures

Mandibular fractures can be classified, based on the anatomical location.

- symphysis
- Body
- Ramus
- Condyle
- coronoid



It can also be classified, based on the types of fractures;

- Greenstick- incomplete fractures with flexible bone. Commonly found in children.
- Simple fracture- a complete transection of the bone with minimal fragmentation at the fractured site.
- Comminuted fracture- the fractured site comprises multiple segments

- Compound fractures= A compound fracture results in communication of the margin of the fractured bone with the external environment. However, any jaw fracture within the tooth bearing segment is an open or compound fracture

Midface fracture

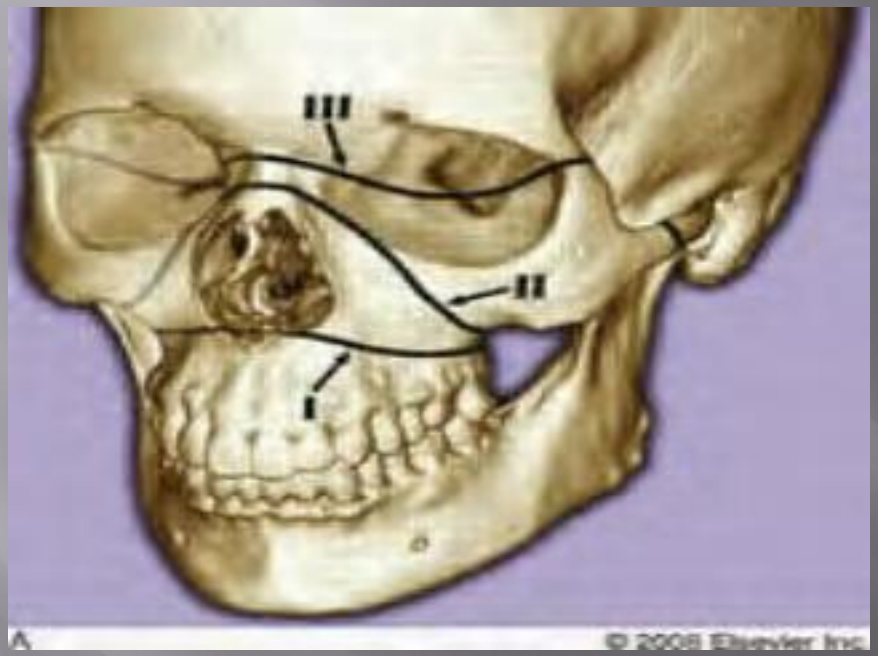
Midface fractures include fractures affecting;

the maxilla ,

- the zygoma, and
- the nasoethmoidal complex

Classification of midface fractures

- Le Fort I
- Le Fort II
- Le Fort III
- Zygomaticomaxillary complex -most common
- Zygomatic arch
- Nasoethmoidal complex

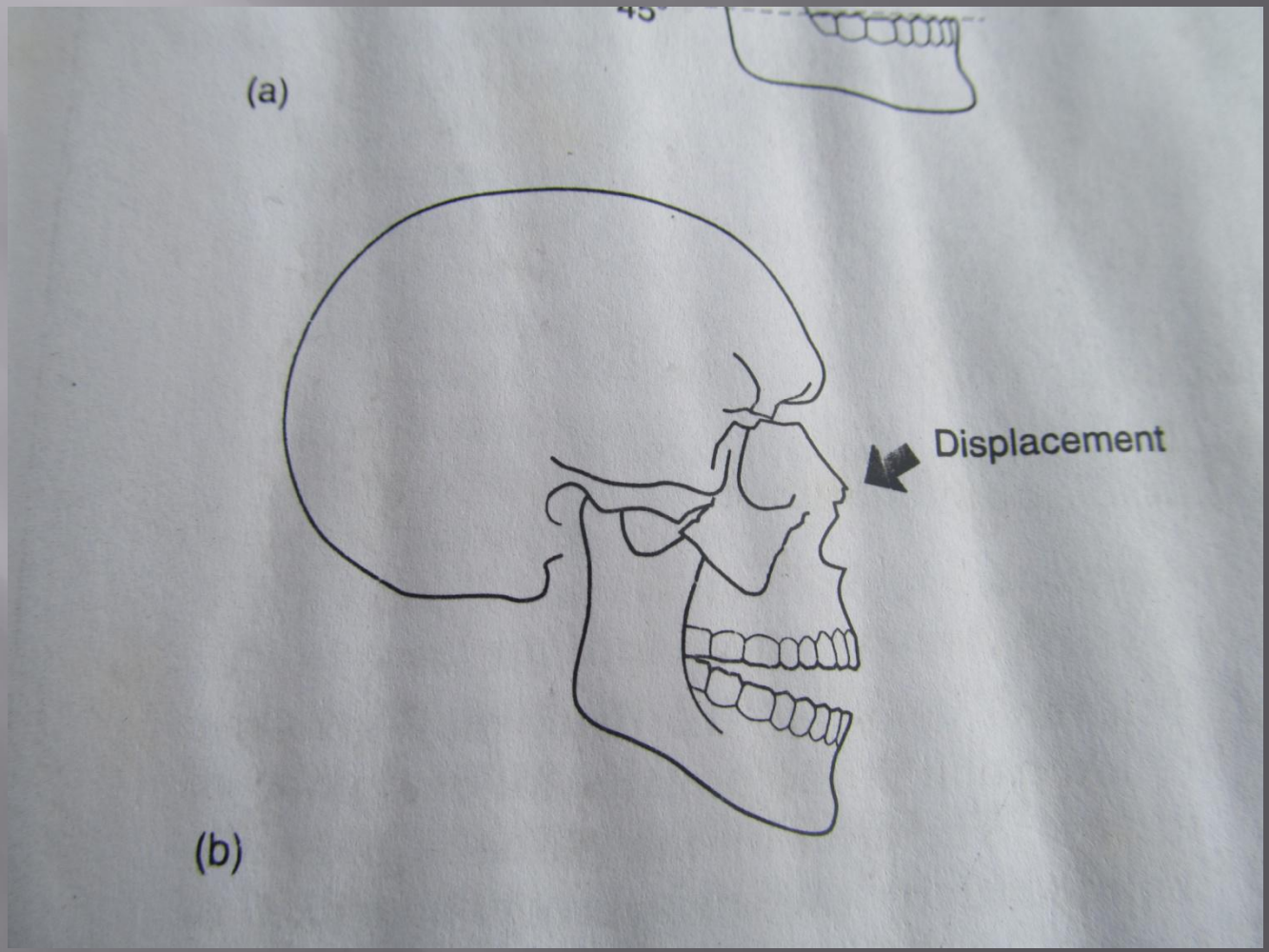


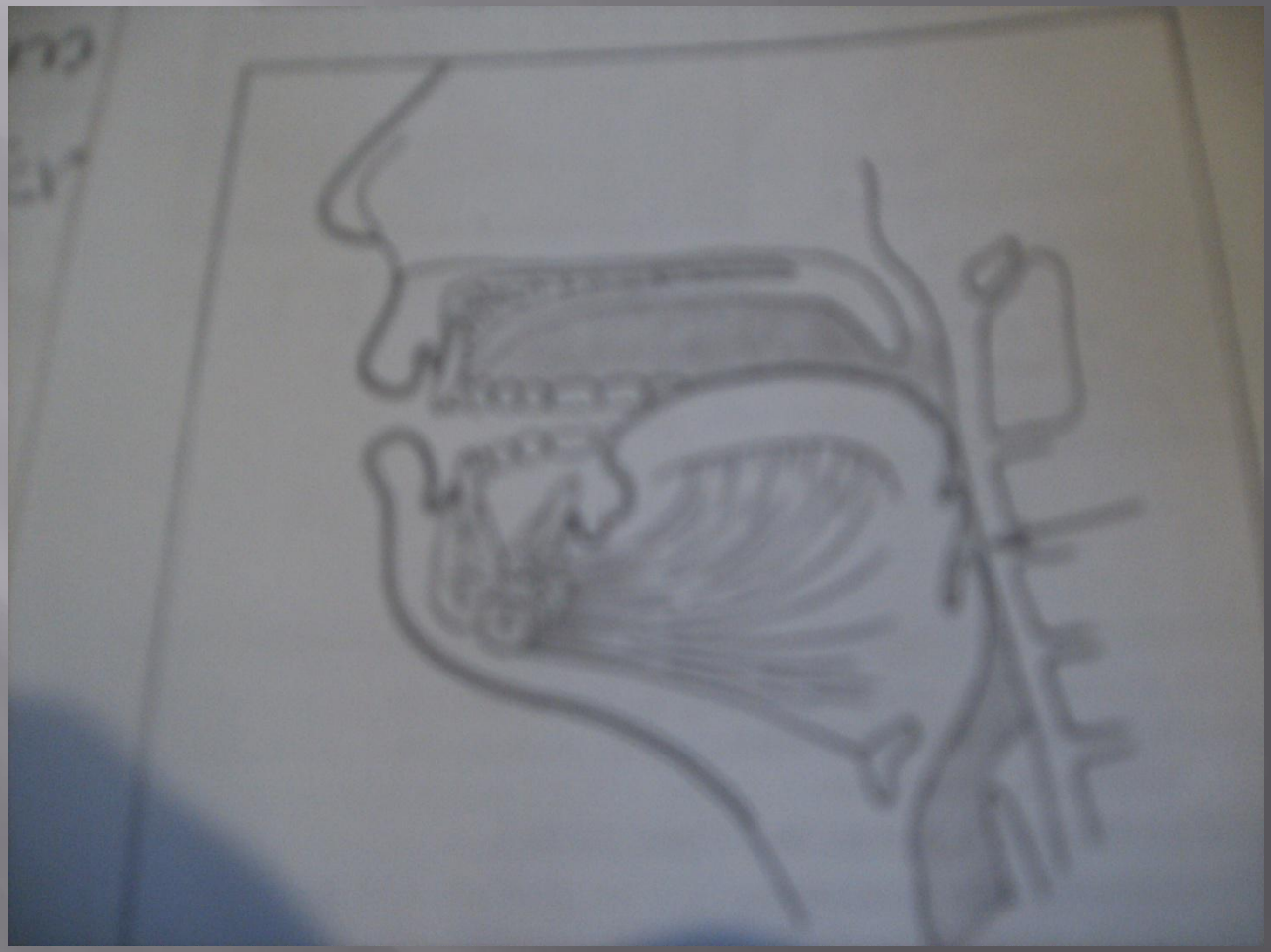
- Le Fort I fracture occurs as a result of application of horizontal force to the maxilla.
- This fracture separates the maxilla from the pterygoid plates, the nasal bone and the zygomatic bone
- Le Fort II fracture separates the nasoethmoidal complex fracture and the maxilla from the orbit and the zygomatic complex

- Le Fort III fractures separate the naseooethmoidal complex ,the zygoma, the maxilla from the base of the skull .

Complications of facial fractures

- Airway obstruction
- Infection
- Delayed union
- Malunion
- Limitation of mouth opening
- Ankylosis (lockjaw)
- Facial nerve palsy





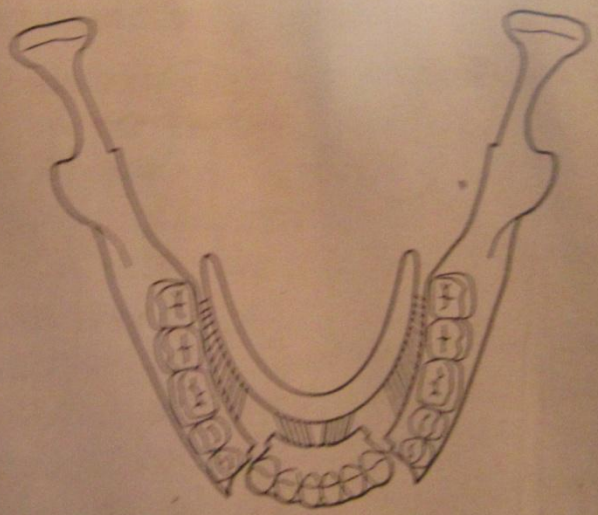


Figure 1.11 Bilateral fracture of the body of the mandible. The anterior fragment is displaced backwards by the pull of the muscles attached to the genial tubercles

Management of facial injuries

Aims & objectives:

To restore patient back to pre-injury state

To facilitate rapid bone healing

To restore normal ocular ,masticatory & speech function

To restore facial & Dental aesthetic function

PRINCIPLES OF MANAGEMENT

PRELIMINARY TREATMENT

- 1. Establish and maintain AIRWAY
- 2. Establish that patient is BREATHING-intubate if necessary
- 3. Arrest HEAMORRHAGE [shock rarely present if facial injuries only]
- 4. Examination of injuries
- 5. Temporary immobilisation of suspected fractures
- 6. Infection-prophylaxis
- 7.Pain relief-avoid sedation

TREATMENT PRIORITIES

Immediate intervention

1. Respiratory obstruction
2. Cardiac arrest
3. Massive bleeding

CONDITIONS THAT REQUIRE URGENT TREATMENT

- 1. Intra-abdominal bleeding
- 2. Head injuries-significant head injuries
- -deterioration
- 3. Chest injuries
- 4. Compound fractures of limbs

Treatment of maxillofacial trauma can be delayed

Treatment of soft tissue injuries

- 1. Tetanus prophylaxis
- 2. Antibiotics
- 3. Irrigation
- 4. Debridement – removal of severely contused tissues and foreign bodies
- 5. Haemostasis
- 6. primary closure – accurately approximate freshened wound edges
- 7. Skin loss – avoid secondary healing of facial wounds:
- a. Undermine skin edges and advance
- b. Skin grafts
- c. Local flaps
- d. suture skin to oral mucosa – gunshot wounds

General principles of fracture treatment

1. Debridement
2. Reduction
3. Fixation
4. Immobilisation
5. functional rehabilittion

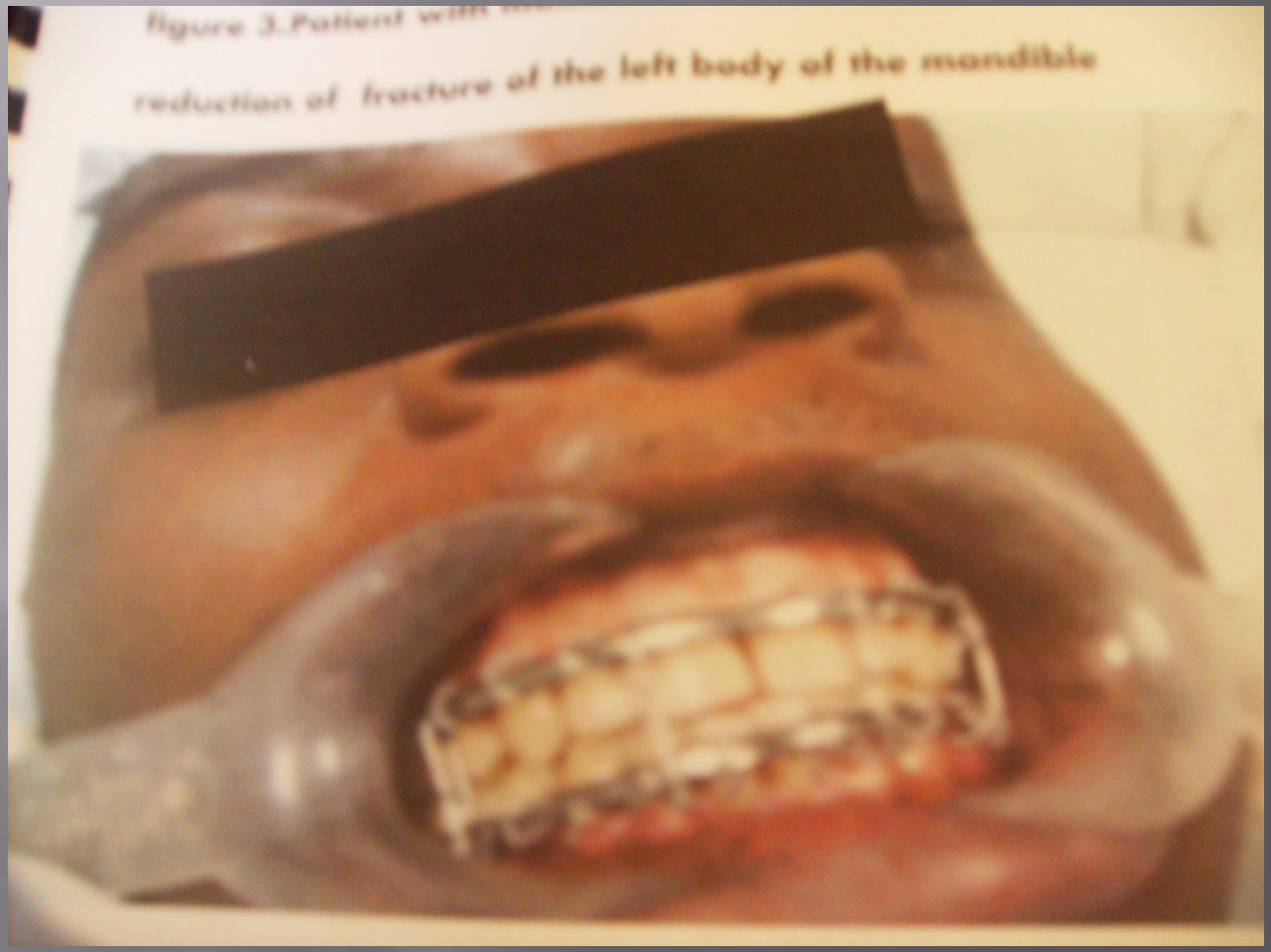
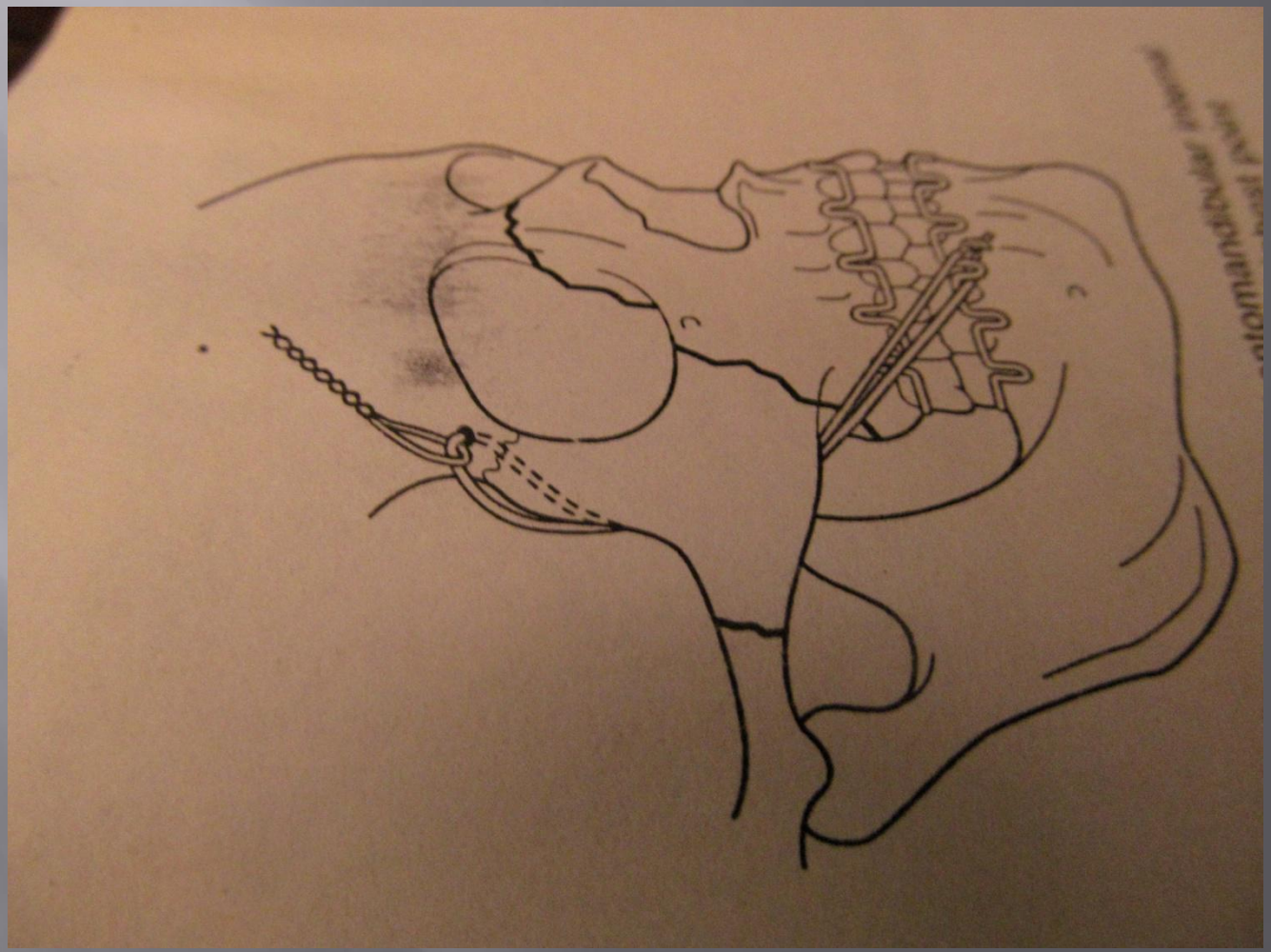
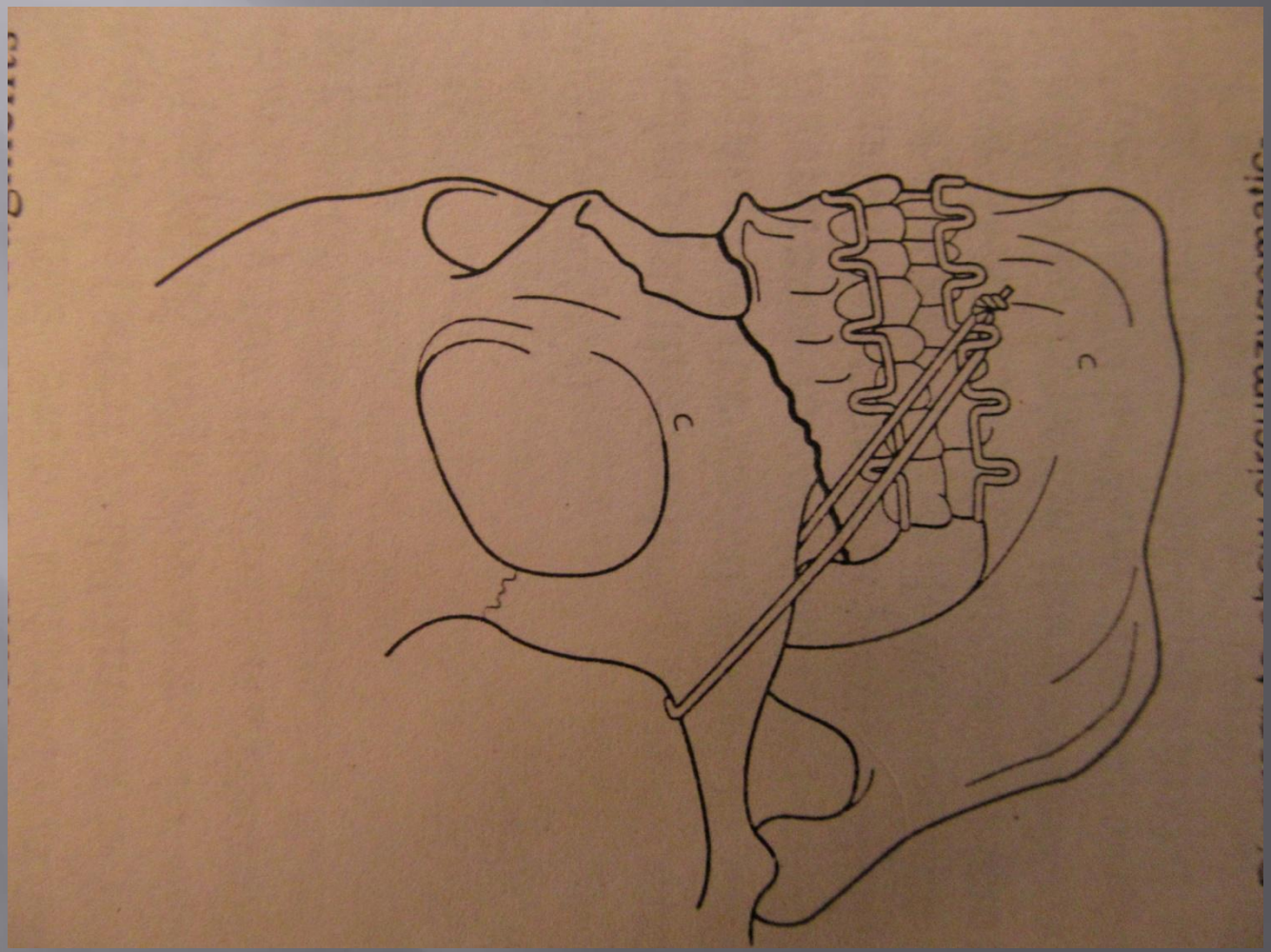


figure 3.Patient with

reduction of fracture of the left body of the mandible





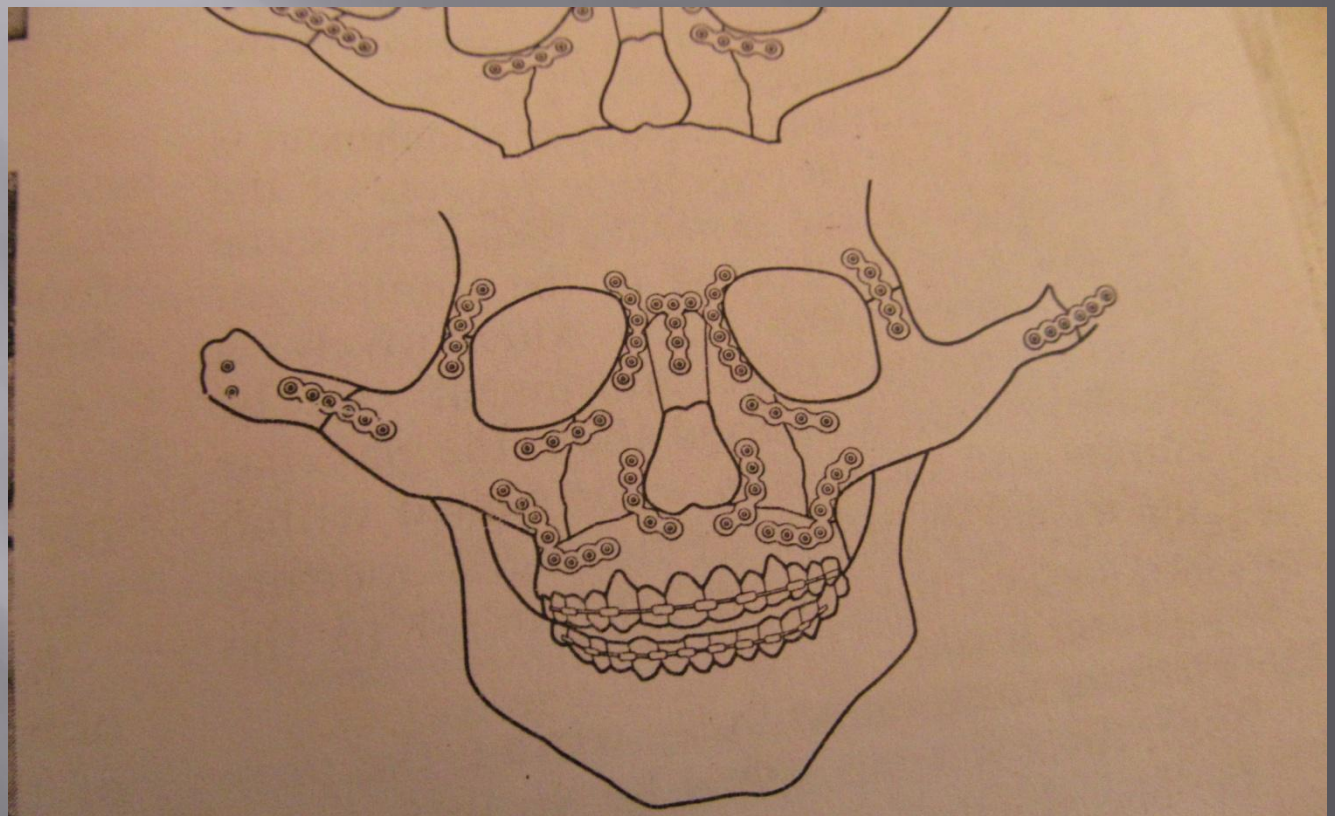
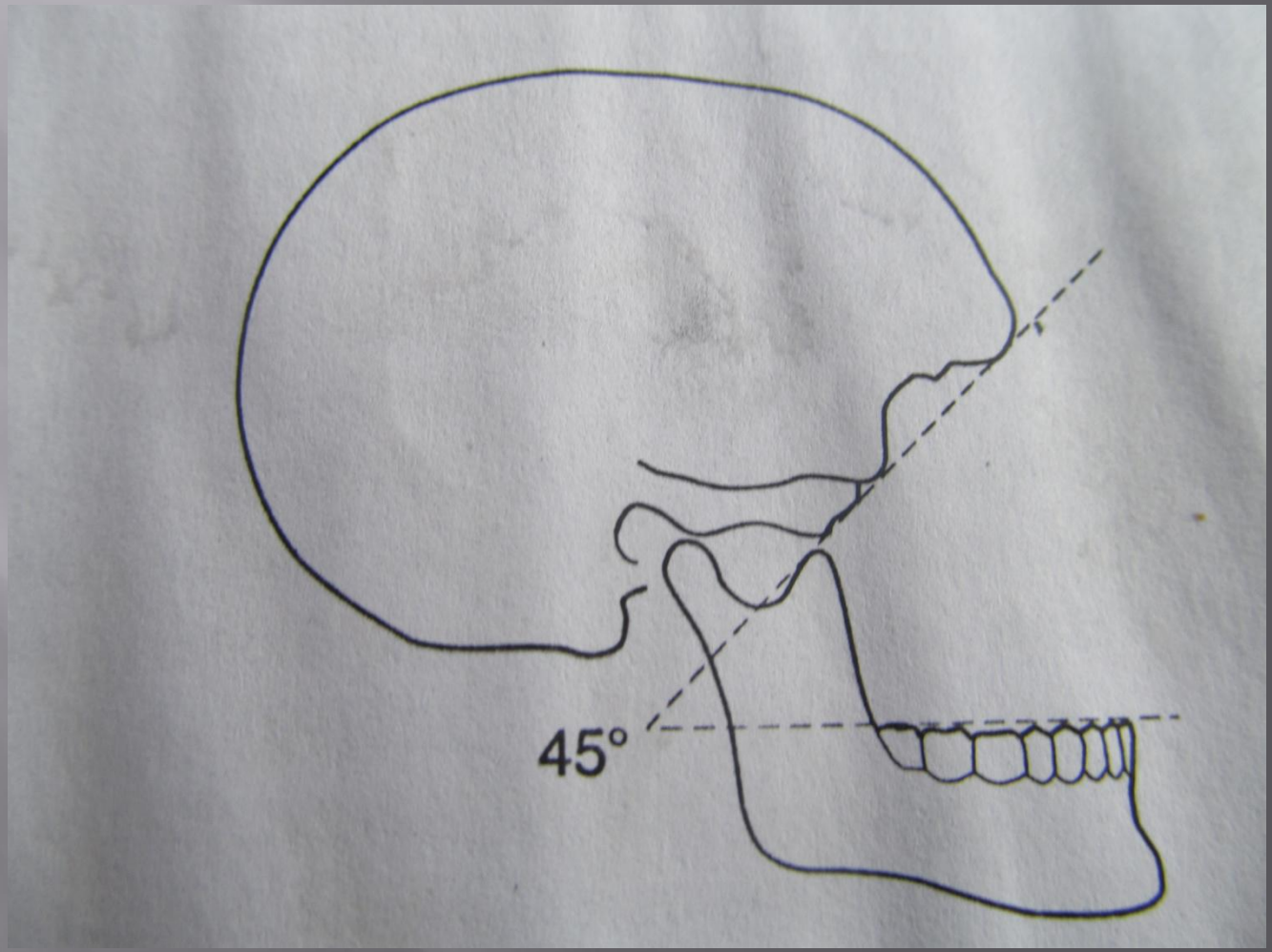


Figure 7.20 Diagram to illustrate the sequence
rebuild a complex panfacial fracture



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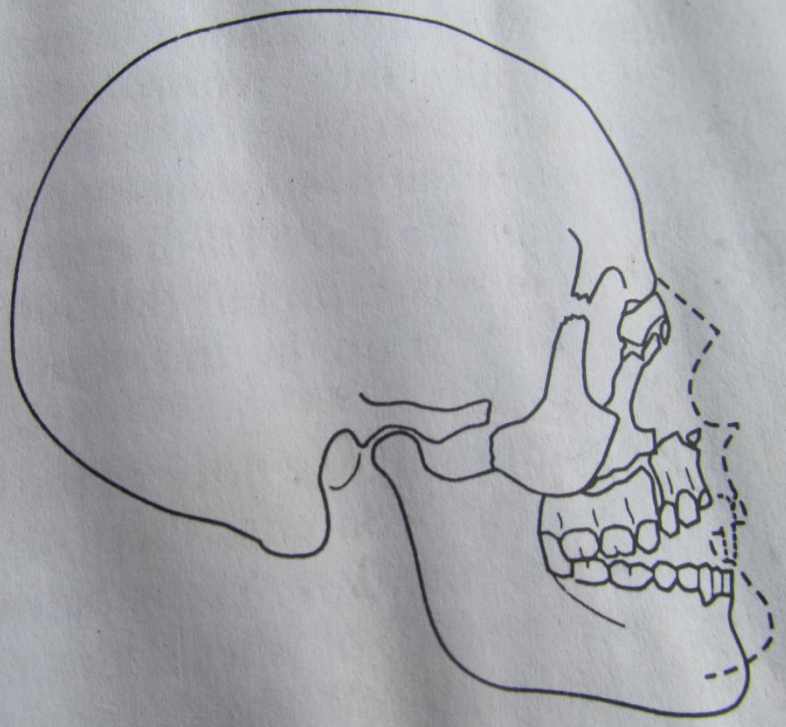

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skull and mandible wit

THANKS FOR LISTENING