

Midfacial Injuries

(MIDDLE 1/3 FACIAL FRACTURES)

AETIOLOGY

- (1) Usually M.C.A.
- (2) Need to carefully assess for airway, neurological injury and spinal & eye injury and other systemic injuries.

MIDFACIAL ANATOMY.

Unlike mandible multiple thin bones after fracturing into multiple pieces.

BONES OF THE MIDEFACE.

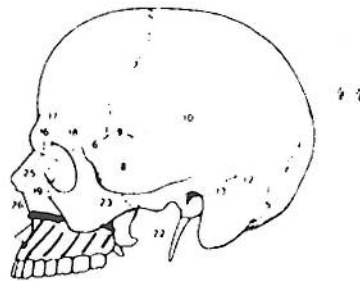
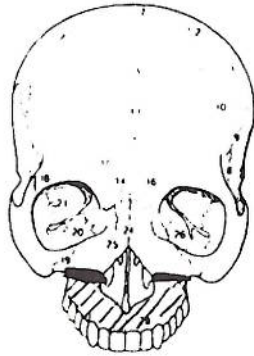
- (1) Nasal - paired
- (2) Maxillae - paired
- (3) Ethmoid
- (4) Zygoma - paired
- (5) Palatine
- (6) Vomer
- (7) Sphenoid

CLASSIFICATION MIDFACIAL FRACTURES.

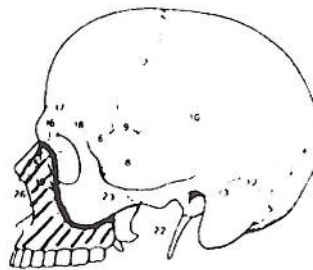
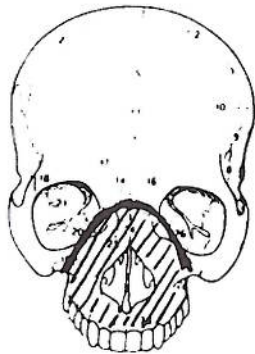
Historically based on Henri Le'Fort who smashed cadaver skulls up in his laboratory, dissected patterns of fractures. Classification developed till generally satisfactory if a very loose way but he was dealing with low level velocity injuries (horse and buggy etc), not a high speed MCA. All midfacial fractures are comminuted. Classification not assistance in treatment but helpful in description.

THREE TYPES

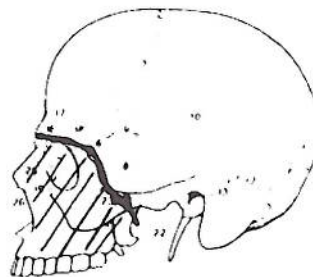
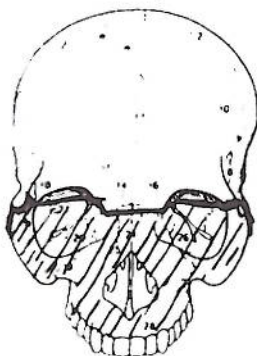
- (1) **LE FORT I** - Low level/upper jaw only. Just involves the maxilla above the ends of the teeth. No nasal/cheek bone involvement.



- (2) **LE FORT II** - Upper jaw and nose.



- (3) **LE FORT III** - Upper jaw, nose and zygomas.



GENERAL MANAGEMENT.

Midfacial fractures often have concomittant injuries which can take priority over special assessment and management of the face.

(1) *Airway, Breathing, Circulation*

(2) *Head injury*

GCS

CT SCAN - If brain CT scan necessary and probable mid 1/3 and/or mandibular injury ask Radiologist to continue CT scan through facial bones.

(3) *Bleeding*

(A) *The midface has a rich blood supply. Epistaxis or bleeding from the mouth may need immediate attention. Usually anterior and/or posterior nasal packing..*

(B) *Can compromise breathing*

(C) *Be careful that occult bleeding is not occurring into nasopharynx and being swallowed/aspirated by patient.*

(4) *Cervical spine. Ensure all cervical vertebrate can be seen on radiograph if ordered. (Often difficult to posture patient to see all vertebrae but this is very important).*

SPECIFIC CLINICAL ASSESSMENT.

(1) *Swelling - midfacial fractures generally result in marked swelling over several hours. (Beware however Le Fort 1 fractures may not).*

(2) *Manipulation of midface by grasping anterior palate teeth with one hand and supporting head with other and noting movement/crepitus/pain.*

- (3) *Palpate for steps along:*
- *Infraorbital margins*
 - *Malar/maxillary buttress*
 - *Zygomatic arches*
- (4) *Examine Eyes.*
- *Acuity*
 - *Movement*
 - *Diplopia (monocular/binocular)*

Ophthalmoscope

- (5) *Facial symmetry.*
- *Depression of malar prominences*
 - *Nasal deviation*
- (6) *Occlusion.*
- *Ask patient if bite normal*
 - *Look to see teeth meeting (interdigitating properly)*
- (7) *Neurosensory Disturbance*
- *Numbness/tingling over distribution infraorbital nerves (cheeks, upper lip, side nose, lower eyelids).*

RADIOGRAPHS

Midfacial injuries (not isolated zygomas/nasal fractures) - CT scan

Plain x-rays may show gross aspects but can often fail to demonstrate complexity of these fractures.

TREATMENT

Most cases require open reduction and internal fixation based on restoring normal anatomy. Surgical approaches may via combined oral and cosmetically suitable facial incisions or pre-existing lacerations.

Fractures are made difficult to manage because of comminution and thin bony fragments. Mini, micro plates can all be used with plan to avoid intermaxillary fixation but may not be necessary.

PRE-OPERATIVE ORDERS FOR MIDEFACIAL FRACTURES.

(1) *Analgesia - Dependent on patient's needs and head injury. These are usually not painful injuries.*

(2) *Antibiotics.
Penicillin 1.2g IV 4 hourly.*

*If open facial wounds
Keflin 1g IV 6 hourly.*

(3) *Steroids.
Loading dose 8 - 16mg Dexamethasone followed by 4 - 8mg 6 hourly.*

(Midfacial fractures often can have significant swelling which may otherwise preclude treatment for 4 - 5 days sometimes).

(4) *I.V. access for drugs and fluid management.*

(5) *Fast until definitive consultation on management.*

(6) *If patient is to be taken to theatre because of concomitant injury, inform faciomaxillary surgeon to attend for evaluation and/or management.*

IMMEDIATE POST OPERATIVE MANAGEMENT.

- (1) *Routine post operative care.*
- (2) *Eye obs if zygoma/orbit surgery with nursing staff to report immediately any significant eye pain/deterioration in vision.*
- (3) *Nurse semi reclined when awake.*
- (4) *Post operative*
 - *Analgesics*
 - *Antibiotics*
 - *Steroids*
 - *Eye medicament*
- (5) *Ice packs*
- (6) *Encourage fluids, soft diet as tolerated.*
- (7) *Post operative radiographs. (Plain films may be satisfactory but complex and orbital fractures - CT scan).*
- (8) *Encourage early ambulation (if no preclusion).*

SUBSEQUENT POST OPERATIVE CARE AND ASSESSMENT.

- (1) *Assess facial symmetry.*
- (2) *Eye function.*
- (3) *Occlusion - Intermaxillary elastic traction can often be required.*
- (4) *Dietary needs much same as fractured mandibles.*

(5) Discharge patients

- Analgesic
- Oral antibiotics
- Mouthwash

(6) Review - Generally 1st review appointment one week and subsequent reviews dependent on patient's injuries and progress.

Minimum review time expected - 6 weeks.