



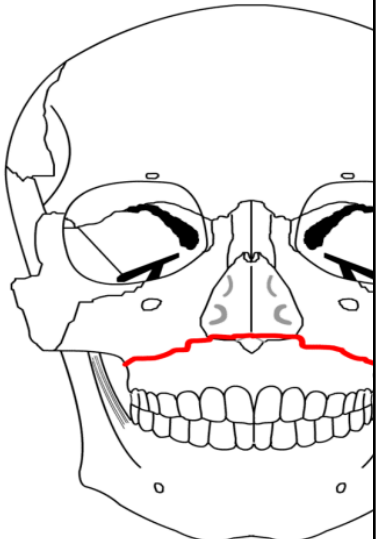
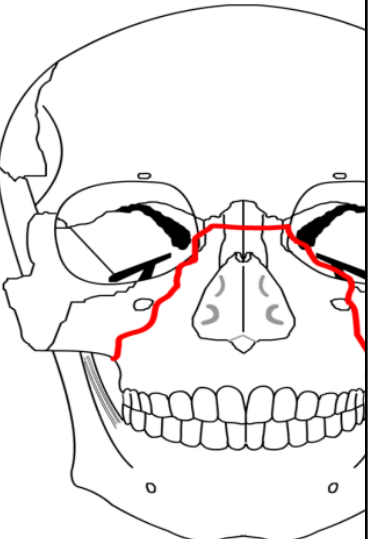
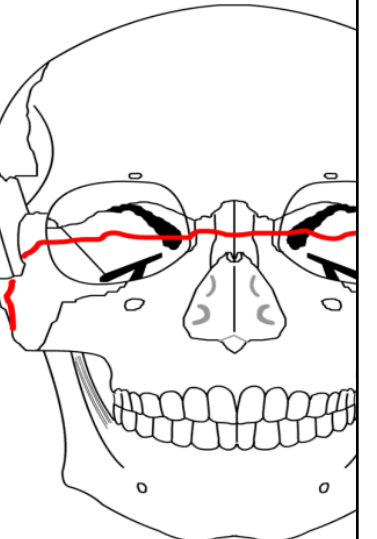
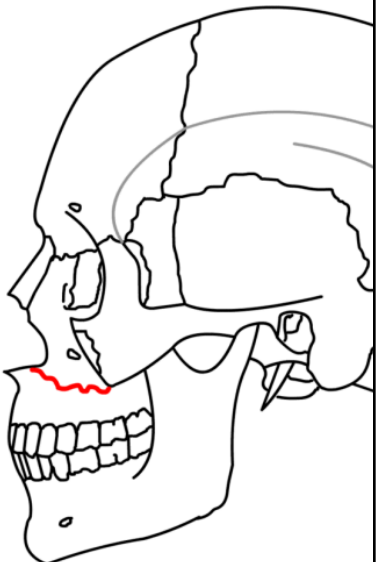
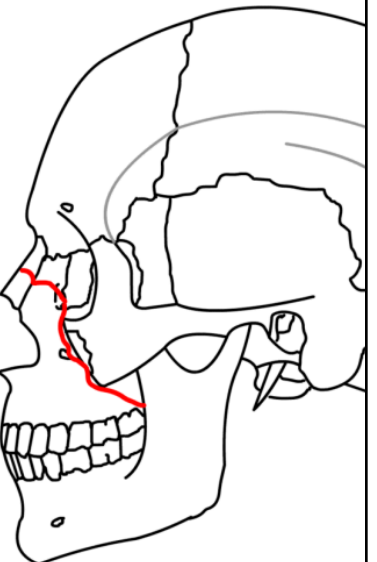
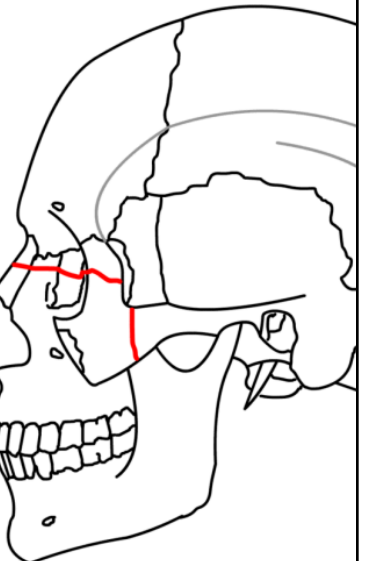
Essential Learning Facial Trauma

- **Initial airway management in facial trauma**
 - Airway management in facial trauma can be challenging and requires extreme care.
 - Early intubation for airway protection may be required in these cases due to extensive hemorrhage and increased risk of mechanical obstruction.
 - Typical maneuvers such as jaw thrust, suctioning, or manually grasping the tongue may not be successful. Use of a nasal airway or trumpet should be avoided.
 - BVM can sometimes help stabilize the midface as it acts as a splint for facial fractures
- **Considerations when performing intubation**
 - Awake intubation should be considered first in patients with facial trauma
 - There are many ways to perform awake intubation. Importance lies in good oropharyngeal local anesthetic and appropriate anxiolysis/sedation.
 - RSI is not technically contraindicated in facial trauma but should be used selectively given concern for difficulty with ventilation. Predicating when ventilation will be difficult is not always straightforward and losing the ability to ventilate can occur quickly.
 - If performing RSI, have neck prepped and cricothyrotomy supplies ready.
 - You should avoid nasal intubation or blind ETT passage given distortion of typical anatomy.
 - Ensure that full cervical spine precautions are used in the setting of trauma, including maintaining in-line stabilization.
- **What are the different types of Le Fort fractures?**
 - Le Fort fractures are transverse fractures of the midface. They are divided into three classifications (sometimes four) ([Figure 25.2](#)).
 - Le Fort I
 - Transverse fracture through maxilla and pterygoid plates just below floor of the nose essentially separating teeth from upper face
 - Involves alveolar ridge, lateral nose, and inferior wall of maxillary sinus
 - Only hard palate and teeth move, not the nose or eyes
 - Le Fort II
 - Pyramidal fracture through central maxilla and hard palate
 - Involves alveolar ridge, pterygoid plates, lateral walls of maxillary sinus, inferior orbital rim, and nasal bones
 - Hard palate and nose move, not the eyes
 - Le Fort III
 - Craniofacial disjunction with separation of maxilla from skull base
 - Involves nasofrontal suture, medial orbital wall, zygomaticofrontal suture, zygomatic arch, and pterygoid plates
 - Entire face moves with exception of eyes which are held in place by optic nerve

- Le Fort IV
 - Le Fort III with frontal bone
 - o All require facial trauma consultation. Most require admission with IV antibiotics and potential surgical repair.
 - o Patients with Le Fort fractures should receive antibiotics focusing coverage on strep and anaerobes. Appropriate IV choices include clindamycin or Unasyn.
- **Examination considerations and pearls in facial trauma**
 - o A systematic examination should take place for all facial trauma so injuries are not missed.
 - o A few special considerations by site
 - Head/Face
 - Frontal bone fractures carry high risk of other intracranial, c-spine, or facial fracture. Consider CSF leak.
 - Isolated zygomatic fractures are rare but require surgical consult
 - Always look for multiple mandibular fractures if one is present (think of a ring). Considered open fractures until through intraoral exam. May have malocclusion. Assess for sublingual hematoma or alveolar ridge fracture with missing teeth. May cause airway compromise.
 - Ear
 - Auricular hematoma predisposes to “cauliflower ear” and should be drained if acute.
 - Assess for hemotympanum, battle sign, CSF leak.
 - Eyes
 - Blow-out fracture involves inferior or medial orbital wall. Adipose tissue, inferior rectus, or inferior oblique can become entrapped within the maxillary or ethmoid sinus. May see diplopia, inability to look up, anesthesia of cheek and upper lip, or enophthalmos.
 - Lateral, inferior, or superior orbital fractures are often associated with other facial fractures.
 - Naso-orbito-ethmoid fractures are often associated with ductal injuries or other traumatic brain injury.
 - Consider corneal abrasion, globe rupture, orbital compartment syndrome, or retinal trauma.
 - Nose
 - Epistaxis can be controlled with direct pressure or anterior packing. Caution with posterior packing as typical anatomy may be disrupted.
 - Septal hematoma requires drainage given risk for septal necrosis.
 - Oral
 - Lip lacerations require delicate repair to maintain cosmesis and function. May require multilayer repair.
 - Through and through wounds should receive multilayer closure starting inside and work outwards.
 - Ducts should be assessed for integrity prior to closure. If involved, consult facial trauma surgery.
 - Tongue lacerations may only need repair if gaping, large (> 1 cm), involve distal aspect, or have significant bleeding.

- Dental injuries are common with facial trauma. Careful exam for fracture, subluxation, or avulsion should be performed in all patients. May require replacement and splinting. Obtain chest x-ray if teeth missing.
- Neck
 - C-spine precautions should be maintained until c-spine injury ruled-out
 - CTA may be necessary to assess for vascular injury
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 - o Editor(s): Dr. Miriam Cordeiro Stone
 - o Essential Learning Editor: Dr. Carrie Maupin
 - o Editor-in-Chief: Dr. Dana Loke, Dr. Kristen Grabow Moore
 - o **References:**
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Figure 25.2 – Le Fort Fractures

Type I	Type II	Type III
		
		
Transverse fracture through maxilla and pterygoid plates just below floor of the nose separating teeth from upper face	Pyramidal fracture through central maxilla and hard palate	Craniofacial dysjunction with separation of maxilla from skull base
Hard palate and teeth move	Maxilla and nose move	Entire face moves with exception of eyes move