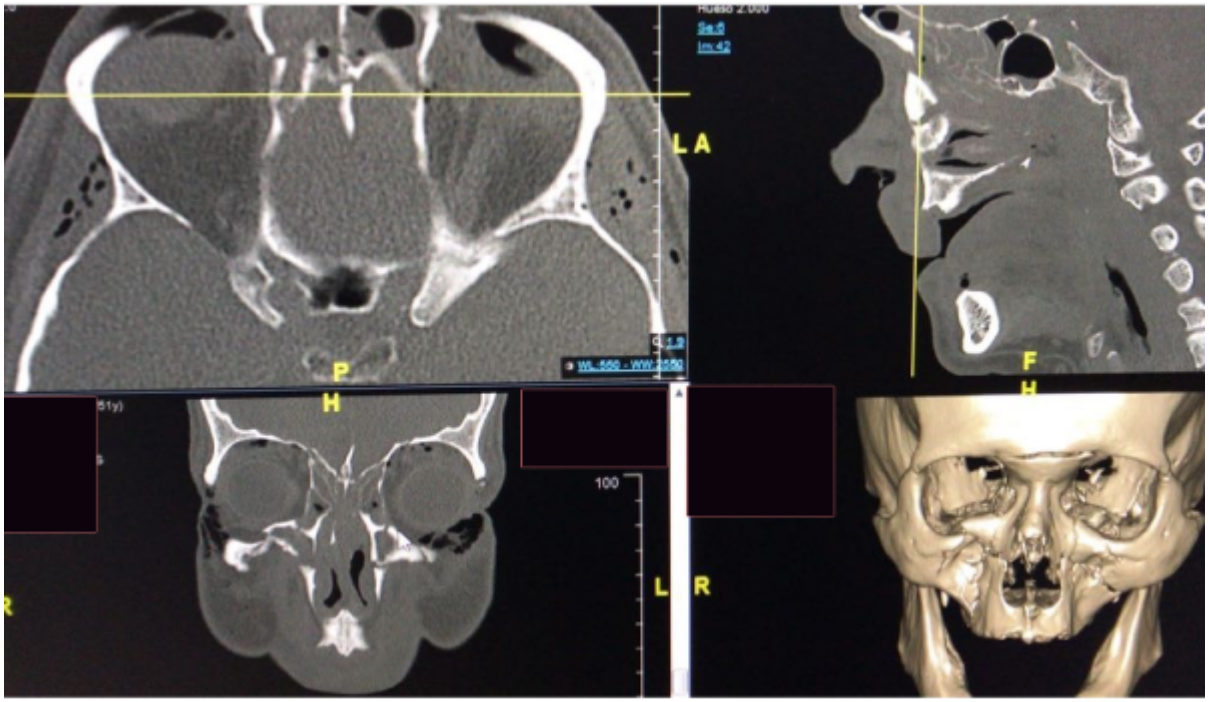
LeFort fracture 3



A LeFort fracture III, also known as craniofacial disjunction or transverse facial dysjunction, is the most severe type of LeFort fracture involving the midface. This fracture pattern extends horizontally across the entire midface, separating the facial skeleton from the base of the skull.

Key features of a Le Fort III fracture include:

Extensive Facial Instability: The fracture line extends through the nasal bones, orbits (eye sockets), zygomatic bones (cheekbones), and maxilla (upper jaw), causing significant instability of the midface. Displacement of Facial Structures: The fracture results in a characteristic “floating” midface appearance, where the entire midface becomes detached from the rest of the skull.

Facial Deformity: Patients with Le Fort III fractures often exhibit severe facial deformity, with flattening of the midface, widening of the interorbital distance (distance between the eyes), and depression of the nasal bridge.

Ocular Involvement: Due to the involvement of the orbits, Le Fort III fractures can cause ocular injuries, including globe (eyeball) displacement, orbital hematoma (collection of blood), or even vision loss.

Airway Compromise: The displacement of midface structures can lead to airway compromise, especially if there is impingement on the nasal passages or obstruction of the nasopharynx.

Associated Injuries: Patients with Le Fort III fractures may also have associated injuries to the brain, cervical spine, or other facial bones.

Treatment of Le Fort III fractures typically involves urgent surgical intervention to realign and stabilize the facial bones. This may include open reduction and internal fixation (ORIF) using plates, screws, or

wires to restore the anatomy of the midface. Additionally, patients may require management of associated injuries, such as repair of ocular injuries or treatment of airway compromise. Physical therapy and rehabilitation are often necessary to optimize functional outcomes and facial aesthetics following treatment.

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33 year old patient : The patient was admitted to the emergency department after falling from a height of 5 floors, presenting multiple severe injuries, including cranioencephalic trauma, facial deformity, open right femoral fracture, and lacerations.

The patient was evaluated using a total body CT scan, which revealed a complex craniofacial fracture involving multiple regions of the skull and mandible. Multiple fractures, bilateral pneumothorax, lung contusions, hepatic and renal lacerations, as well as a slight irregularity of the left internal carotid artery, were observed.

The patient was taken to the operating room for external fixator placement and laceration suturing. During surgery, he experienced hemodynamic instability requiring high doses of vasopressor support and acidosis correction. Subsequently, he was transferred to the intensive care unit for postoperative monitoring.

During his stay, the patient showed significant clinical improvement. He underwent additional surgical interventions for the repair of femur and Le Fort III fracture, with an uncomplicated recovery. He was successfully decannulated and discharged to the Neurosurgery ward for referral to the Maxillofacial service.

Follow-up: The patient is currently undergoing critical care physiotherapy, with good tolerance and satisfactory progression. Treatment with Fluconazole was maintained due to the presence of Candida at the catheter tip without signs of systemic infection.

Conclusions: Despite the severe injuries caused by the fall from height, the patient showed favorable recovery with successful surgical interventions and progressive clinical improvement. A multidisciplinary approach was required for his management, including neurosurgery, traumatology, and maxillofacial surgery.

Involves zygomatic arches, zygomaticofrontal suture, nasofrontal suture, pterygoid plates and orbital floors (separating maxilla from cranium). Requires significant force, therefore often associated with other injuries, including brain injuries.

May follow impact to the nasal bridge or upper maxilla. The salient feature of these fractures, beyond pterygoid plate involvement, is that they invariably involve the zygomatic arch, or cheek bone. These fractures begin at the nasofrontal and frontomaxillary sutures and extend posteriorly along the medial wall of the orbit, through the nasolacrimal groove and ethmoid air cells. The sphenoid is thickened posteriorly, limiting fracture extension into the optic canal. Instead, the fracture continues along the orbital floor and infraorbital fissure, continuing through the lateral orbital wall to the zygomaticofrontal junction and zygomatic arch. Within the nose, the fracture extends through the

base of the perpendicular plate of the ethmoid air cells, the vomer, which are both part of the nasal septum. As with the other fractures, it also involves the junction of the pterygoids with the maxillary sinuses. Cerebrospinal fluid rhinorrhea, or Cerebrospinal fluid leakage, is more commonly seen with these injuries due to ethmoidal sinus disruption, as the air cells are located immediately beneath the skull base [1].

1)
Winegar, B. A.; Murillo, H; Tantiwongkosi, B (2013). “Spectrum of critical imaging findings in complex facial skeletal trauma”. RadioGraphics. 33 (1): 3–19. doi:10.1148/rg.331125080. PMID 23322824.