Zygomatic fractures

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Zygomatic (cheek/malar) bone fractures are often the result of blunt trauma to the midface, such as from a fist. From a clinical perspective, it is helpful to consider the zygomatic bone as a four-legged stool, as shown in Figure 31.10 . The four legs comprise the zygomatic arch running anteroposteriorly , the zygomatic process running vertically to join the fronto zygomatic (FZ) process of the frontal bone at the FZ suture, the infraorbital rim running horizontally and the maxillary buttress running vertically . Zygomatic fractures may include isolated or multiple fracture lines involving any of these legs, often in combination with orbital wall fracture. Zygomatic fractures may be di ffi cult to assess in the pres ence of significant facial swelling; therefore, patients are usu ally re viewed in clinic 1 week after injury to allow the swelling to subside. There may be periorbital swelling and bruising, step deformity and frequently a subconjunctival haemorrhage with Sir Harold Delf Gillies , 1882–1960, born New Zealand, studied medicine at the University of Cambridge, Cambridge, UK, pioneer of plastic surgical tech niques during and after the First World War. William Williams Keen , 1837–1932, pioneer American neurological surgeon. - no posterior border or limit (Figure 31.11). A concomitant orbital bone fracture also needs to be excluded; if suspected, a CT scan to include the orbits should be obtained. Undisplaced or minimally displaced zygomatic fractures are often treated conservatively , with patients being told to avoid any excessive pressure on the a ff ected side for a mini- - m um of 3 weeks. The indications for surgical intervention - include asymmetrical cheek bone prominence, persistent eye symptoms such as diplopia, orbital deformity and restricted mouth opening due to impingement of the coronoid process by the bone fragment. There are a variety of transcutaneous (including upper and lower lid) and intraoral surgical approaches for access, deter - mined by the exact location of the fracture. The isolated zy go - matic fracture is often reduced by a closed technique involving an incision in the temple (Gillies’ lift) or intraorally (Keen’s technique). The ORIF of FZ suture fractures and infraorbital rim or maxillary buttress fractures usually includes low-profile 1.5-mm midface titanium plates and screws. The provision for single-, double-, triple- or four-point fixation of the zygomatic fracture is dependent on the stability of the fracture post reduc - tion and the degree of bone comminution. Summary box 31.6 Fractures of the zygomatic bone /uni25CF /uni25CF /uni25CF -

Figure 31.10 The ‘four legs of the stool’. Figure 31.11 Fractures of the zygoma may often be

associated with periorbital swelling and subconjunctival haemorrhage without a pos

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Maxillary fractures are classified according to their anatomical level, as originally described by René Le Fort (Figure 31.12 Le Fort I involves a fracture line extending from the pterygoid plates through the lateral wall of the maxillary sinus and piriform aperture of the nose. Le Fort II involves the whole of the dentition-bearing portion of the maxilla and the nasal bones. The fracture line extends from the pterygoid plates to the inferior orbital rim and across the bridge of the nose. Le Fort III fracture essentially is where the whole of the midface is separated from the skull base. The fracture line runs from the pterygoid plates to the base of the zygomatic arch, the lateral walls of the orbit through the FZ suture and the nasal bridge. The Le Fort classification is simple to describe, but the clin ical presentation may not be as clear-cut as the fractures at these lev els rarely occur in isolation. There may be significant (a) (b) (c) René Le Fort , 1869–1951, French surgeon, classified facial fractures after macabre research in which he dropped rocks and other heavy objects onto the faces of cadavers.). - commination owing to the thin composition of the maxillary bone as well as the di ff ering pattern of fracture on two sides. Undisplaced or minimally displaced factures are best treated conservatively with a soft diet and analgesia. The indi - cations for ORIF include a mobile, unstable maxilla, deranged occlusion such as an anterior open bite and loss of facial pro - jection and width resulting in obvious facial deformity . Fixation is achieved with midface 1.5-mm miniplates and screws, with various surgical approaches for access depending on the loca - tion of the fracture. Plates are usually placed along the main facial buttresses, which provide the optimal strength and bone quality to be able to hold the screws (Figure 31.13). Summary box 31.7 Maxillary bone fractures /uni25CF /uni25CF

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