Injuries of the orofacial region

Common classification of injuries of the orofacial region (OFR):

- facial soft tissue injuries
- foreign bodies of the OFR
- fractures of the facial skeleton (e.g. frontal bone + facial bones)
- injuries of joints of the OFR
- dentoalveolar injuries

Facial soft tissue injuries – commonly abrasions, bruises, lacerations, blast injuries, human bites, animal bites. In the case of using of the sharp weapon there can be stabbed and slashed wounds as well as their combinations. These injuries require force impact of low up to middle intensity as facial tissues are mostly subtle and low resistant. Note the visible perifocal edema and severe bleeding from facial wounds due to exceptional blood supply of facial tissues. That’s why radical débridement of damaged facial tissues is also never indicated. For more severe facial soft tissue injuries, a trauma evaluation is mandatory with establishment of a secure airways, skin and muscle innervation (nerve V and VII) as well as cervical soft tissues control.

Foreign bodies of the OFR – stones, sand, glass pieces at traffic accident and fall injuries, projectiles at shot wounds. From the surgical point of view, foreign bodies must be removed and facial wounds should be irrigated and closed within 8 hours of the injury. Primary closure must be observed until 24 hours after injury. Tetanus and antibiotic prophylaxis should be administered. Careful attention to nerve VII function and parotid duct integrity should be paid. Radiological evaluation is necessary to check bony fractures.

Fractures of the facial skeleton include nasal fractures, mandible fractures, zygomatic complex, maxilla (Le Fort I, Le Fort II, Le Fort III), naso-orbital-ethmoid complex (NOE), and frontal sinus fractures. The mechanism of fractures is mostly blunt high-energy force and intense pressure at fist blows, blunt objects impacts, falls, traffic accidents and combine wounding (shot wounds, explosions). Nasal fractures are the most common facial fractures. It is mandatory to check the nasal septum for a septal haematoma: an undrained septal haematoma can result in necrosis and destruction of the nasal septum. The injured NOE persons often present with a saddle-nose deformity, a wide and swelled nasal root and telecanthus (wide interpupillary distance due to bilateral fracture of the medial orbital walls), as well as excessive lacrimation, where the damage to the nasolacrimal duct is involved. Fractures of the frontal sinus are also associated with NOE complex injuries. Note the periorcular bruises (eye-glass-like haematoma) as the evidence of NOE complex injury. Cerebrospinal fluid outflow form nostrils (rhinorrhea) shows the possibility of the fracture of the posterior wall of the frontal sinus which is spreading onto anterior cranial fossa. Midface fractures involving the zygomatic and maxillar bones including Le Fort fractures are the result of the direct blunt high-energy force.

Le Fort I fractures traverse the down maxilla horizontally at the level of the nasal piriform opening. Le Fort II fractures involve the nasofrontal junction, the nasal process of the maxilla, medial portion of the inferior orbital fissura, and anterior part of maxilla. Le Fort III fractures are characterized with complete disjunction of the facial skeleton from the skull base (Townsend C. M.; Sabiston Textbook of Surgery, 18th ed., 2007).

Mandible fractures are second after nasal fractures in frequency. They are divided on unilateral and bilateral, the fractures of mandibular body an mandibular branches: angular, condylar, subcondylar fractures, coronoid process fractures. The mandible is the largest and strongest of the facial bones, thus the force required to fracture the mandible can also damage the cervical spine, that are reported in 10% of cases of mandibular injuries. Fractures of the zygomatic bone are described as zygomatic complex fractures as a result of lateral impacts on the head.

Injuries of joints of the OFR are commonly related to the temporomandibular joint, mental symphysis (in youngs) and palatine suture. They are result of non-direct blunt force impact on the temporal, parotid mental and buccal regions of the face.

Dentoalveolar injuries are dental fractures (crown, neck, root) or luxations of teeth ex alveolar fossae due to direct impact on the alveolar arches. They are often associated with maxillo-mandibular fractures.