Pediatric Facial Trauma

Ravi Pachigolla, MD
The University of Texas Medical Branch
Department of Otolaryngology
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INTRODUCTION

- Leading cause of death
- Different treatment modalities in children vs. adults
EPIDEMIOLOGY

- Amount of facial injuries
- Nasal Fractures most common
- Types of mandibular fractures
- Midfacial fractures rare
- Associated injuries common
FACIAL GROWTH

- Facial development slower than cranial development
- Development of face and paranasal sinuses affects patterns of injuries
- Vulnerable growth centers of the face
EXAMINATION OF THE INJURED CHILD

- Sedation often necessary
- Calm reassurance
- Thorough examination of lacerations and orderly palpation
- Mandibular range of motion
- Ophthalmologic exam
SOFT TISSUE INJURIES

- Scars more noticeable
- FN and parotid duct injuries
- Prevention of traumatic tattooing
- Topical and buffered infiltrative anesthesia
- Auricular hematoma
- Bite wounds
RIGID FIXATION

- Standard of care for adult trauma patients
- Controversial use in children
- Studies focused on infant animals with rapid facial growth compared to humans
- Use of absorbable plates may provide answer
- Mandible may resist growth disturbance more than midface
RADIOLOGIC EXAMINATION

- CT imaging mandatory for most injuries except for the most trivial
- Coronal imaging important
- Panorex plus Towne’s views
- Nasal fractures usually a clinical diagnosis and even moreso in children
NASAL FRACTURES

- Children have soft, compliant cartilages
- Fractures rare
- Septal injuries more common with septal hematoma
- Long term growth disturbance
- Conservative reduction
- Newborn nasal trauma
MANDIBULAR FRACTURES

- Dentoalveolar injuries
- Cautious use of intermaxillary fixation
- Pattern of injuries with condyle most frequently injured
- Possible growth disturbance
- High osteogenic potential
- Rare complications
MANDIBULAR FRACTURES CONT.

- Physical Exam
- Observance of mandibular range of motion and malocclusion
- Radiographic assessment
- Greenstick common
- Types of condylar fractures
ORBITAL AND NASOETHMOID INJURIES

- Severe cosmetic and functional consequences if not adequately treated
- ZMC fractures rare in children less than 5 because of lack of pneumatization of sinuses
- Orbital roof injuries more common in children less than 7 because of lack of pneumatization of frontal sinus and cranium more exposed
ORBITAL INJURIES CONTINUED

- Craniofacial ratio
- Orbital roof injuries associated with neurocranial injuries commonly
- Orbital roof injuries rarely require repair
- Supraorbital rim fractures rare
NASOETHMOID FRACTURES

- Central fragment
- Adequate exposure
- Reconstruction of appropriate intercanthal distance and medial canthal ligaments
MAXILLARY FRACTURES

- Type 1 injuries
- Type 2 injuries
- Type 3 injuries
- Increased forced needed for these fractures
- Comminution uncommon
- Goals of therapy
- Avoidance of excessive undermining
MAXILLARY FRACTURES CONT.

- Restore three dimensional facial symmetry, occlusion and proportions
- Sequencing of repair of multiple injuries
CONCLUSION