

Facial and/or Dental Trauma

Aliases

None noted

Patient Care Goals

1. Preservation of a patent airway
2. Preservation of vision
3. Preservation of dentition

Patient Presentation

Inclusion Criteria

Isolated facial injury, including trauma to the eyes, nose, ears, midface, mandible, dentition

Exclusion Criteria

1. General Trauma [see [General Trauma Management guideline](#)]
2. Burn trauma [see [Burns guideline](#)]

Patient Management

Assessment

1. Consider patient medications with focus on blood thinners or anti-platelet agents.
2. Apply ABCs with particular focus on ability to keep airway patent:
 - a. Stable midface
 - b. Stable mandible
 - c. Stable dentition (poorly anchored teeth require vigilance for possible aspiration)
3. Assess bleeding (which may be severe—epistaxis, oral trauma, and facial lacerations).
4. Patient medications with focus on blood thinners/anti-platelet agents
5. Assess cervical spine pain or tenderness [see [Spinal Care guideline](#)].
6. Assess mental status for possible traumatic brain injury [see [Head Injury guideline](#)].
7. Perform gross vision assessment.
8. Watch for dental avulsions.
9. Collect any avulsed tissue or teeth.
10. Check airway for obstructions: Lost teeth not recovered on scene may be in the airway.
11. Assess for overall trauma.
12. Perform specific re-examination geared toward airway and ability to ventilate adequately.

Treatment and Interventions

1. Administer oxygen as appropriate for dyspnea or distress with a target of achieving greater than 93% saturation for most acutely ill patients.
2. Use ET_{CO}₂ to help monitor for hypoventilation and apnea.
3. Establish IV access, as needed, for fluid or medication administration [*AEMT*].
4. Administer pain medication per the [Pain Management guideline](#).
5. Perform the following for an avulsed tooth:
 - a. Avoid touching the root of the avulsed tooth. Do not wipe off tooth.
 - b. Pick up at crown end. If dirty, rinse off under cold water for 10 seconds.
 - c. Place in milk or saline as the storage medium. Alternatively, an alert and cooperative patient can hold tooth in mouth using own saliva as storage medium.
6. Eye trauma:
 - a. Place eye shield for any significant eye trauma.
 - b. If globe is avulsed, do not put back into socket. Cover with moist saline dressings and then place cup over it.
7. Mandible unstable :

- a. Expect patient cannot spit or swallow effectively and have suction readily available.
 - b. Transport sitting up (preferred) with emesis basin or suction available. (In the absence of a suspected spinal injury)
8. Epistaxis:
- a. Have patient bleed nose to remove any clots within nasal airway
 - b. Consider **Oxymetazoline**:
 - a. 2 sprays each nostril [EMT]
 - b. 0.5-1 mL per nostril via nasal atomizer
 - c. Consider **Tranexamic Acid**
 - a. 0.5-1 mL per nostril via nasal atomizer,
 - i. May be mixed with Oxymetazoline
 - d. Apply nasal clamp or squeeze nose (or have patient do so) for 10–20 minutes continuously.
 - e. Consider blood pressure management if blood pressure is greater than 190/110
9. Nose or ear avulsion:
- a. Recover tissue if it does not waste scene time.
 - b. Transport with tissue wrapped in dry sterile gauze in a plastic bag placed on ice.
 - c. Address severe ear and nose lacerations with a protective moist sterile dressing.

Patient Safety Considerations

1. Conduct frequent reassessment of airway.
2. Maintain patency of airway; this is the highest priority: Conduct cervical spine assessment for field clearance (per [Spinal Care guideline](#)) to enable transport sitting up for difficulty with bleeding, swallowing, or handling secretions.

Notes and Educational Pearls

Key Considerations

1. Airway may be compromised because of fractures or bleeding.
2. Lost teeth not recovered on scene may be in the airway.
3. After nasal fractures, epistaxis may be posterior and may not respond to direct pressure over the nares with bleeding running down posterior pharynx, potentially compromising airway.
4. Protect avulsed tissue and teeth.
 1. Avulsed teeth may be successfully re-implanted if done so in a very short period after injury.
 2. Use moist sterile dressing for ear and nose cartilage.
5. For penetrating eye injuries, do not remove foreign bodies. Splint in place. Cover uninjured eye or ask patient to close eye to prevent conjugate movement of injured eye.
6. Consider administration of antiemetics to prevent increases in intraocular pressure due to nausea and vomiting in penetrating and blunt trauma to the eye [See [Nausea - Vomiting Guideline](#)].

Pertinent Assessment Findings

1. Unstable facial fractures that can abruptly compromise airway
2. Loose teeth and retro-pharynx bleeding

Quality Improvement

Associated NEMSIS Protocol(s) (eProtocol.01)

- 9914205—General-Dental Problems
- 9914057—Injury-Facial Trauma
- 9914099—Injury-Eye

Key Documentation Elements

- Airway patency and reassessment
- Degree and location of hemorrhage

- Mental status (GCS or AVPU)
- Technique used to transport tissue or teeth
- Eye exam documented, when applicable
- Assessment and management of cervical spine
- Patient use of anticoagulant medications

Performance Measures

- Appropriate airway management and satisfactory oxygenation
- Eye shield applied to eye trauma
- **EMS Compass® Measures** (for additional information, see www.emscompass.org)
 - *PEDS-03: Documentation of estimated weight in kilograms.* Frequency that weight or length-based estimate are documented in kilograms
 - *Trauma-01: Pain assessment of injured patients.* Recognizing that pain is undertreated in injured patients, it is important to assess whether a patient is experiencing pain
 - *Trauma-02: Pain re-assessment of injured patients.* Recognizing that pain is undertreated in injured patients, it is important to assess whether a patient is experiencing pain
 - *Trauma-04: Trauma patients transported to trauma center.* Trauma patients meeting Step 1 or 2* or 3** of the *CDC Guidelines for Field Triage of Injured Patients* are transported to a trauma center
 - Any value documented in NEMSIS eInjury.03 - Trauma Center Criteria * 8 of 14 values under eInjury.04 - Vehicular, Pedestrian, or Other Injury Risk Factor match Step 3, the remaining 6 value options match Step 4.

References

1. Bord S, Linden J. Trauma to the globe and orbit. *Emerg Med Clin N Am.* 2008;26(1):97- 123.
2. Patel P, Stanton D, Granquist E. Common dental and orofacial trauma: evaluation and management. *Med Clin N Am.* 2014;98(6):1261-79.