An Algorithmic Approach to Triaging Facial Trauma on the Sidelines

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KEYWORDS

• Facial trauma in sports • Initial triage • Airway protection

KEY POINTS

- With any facial trauma, always complete a focused initial assessment following the ABC (airway, breathing, cervical spine) repeat ABCDE (airway, breathing, circulation, disability, exposure) mnemonic:
  - Airway: perform jaw thrust.
  - Breathing: facilitate clearance of secretions and assess for risk of aspiration.
  - Cervical spine: assess and immobilize athlete.
  - Airway: assess for 5 injuries that can lead to delayed airway obstruction.
  - Breathing: control aspiration risks and have a high index of suspicion for laryngeal trauma.
  - Circulation: manage epistaxis, transfer patient if posterior epistaxis is present, and obtain hemostasis of bleeding or perform compression and transfer patient.
  - Disability: determine Glasgow Coma Scale score and, if less than 15, continue to reassess; assess visual acuity and extraocular eye movements.
  - Exposure: reassess the cervical spine, transfer patient immediately if avulsed teeth are present, and examine for signs of basilar skull fracture or depressed skull fracture.
- The most critical component of the algorithm is the diagnosis and management of airway obstruction and aspiration.
- A thorough assessment will also include the recognition and treatment of associated high mortality injuries.

On the field, evaluation of facial trauma requires a focused initial assessment of the patient's airway and breathing, along with a good knowledge of the potential associated injuries. The resulting hemorrhage and deformity from facial trauma can distract providers from recognizing critical injuries that need immediate intervention; thus, it is important to stay true to a focused algorithm of evaluation. The algorithm to follow in facial trauma is the mnemonic ABC (airway, breathing, cervical spine), followed by a repeat ABCDE (airway, breathing, circulation, disability, exposure).

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Clin Sports Med 36 (2017) 279–285
http://dx.doi.org/10.1016/j.csm.2016.11.003 **sportsmed.theclinics.com**

AIRWAY

A good airway assessment is critical in the setting of facial injuries. Failure to recognize airway compromise and appropriately secure and protect the airway is the most common factor related to patient mortality in facial trauma.[1] Because facial injuries result from a significant impact, transient or prolonged loss of consciousness from intracranial injury can occur. When an athlete is unconscious, pharyngeal tone is lost, which can lead to airway obstruction by pharyngeal tissue, the tongue, mouth guards, and unstable fracture fragments. The initial airway assessment is focused on reversing this obstruction and assessing the athlete's ability to maintain airway patency. A modified jaw thrust is the first maneuver to perform to relieve airway obstruction (**Fig. 1**).

The modified jaw thrust is also a substantial pain generator, and if the athlete does not react, grimace, or reach toward the provider's hands, be concerned about the patient's neurologic ability to protect the airway. This maneuver requires a hard stop in the algorithm, and emergency medical services should be called because the patient is likely to require an airway intervention. Airway intervention in facial trauma is difficult and should only be attempted by experienced providers. Temporizing measures include continuing a modified jaw thrust to allow ventilation, and, should the patient become apneic or require positive pressure ventilation, a bag mask valve can be used to provide oxygenation. It may be difficult to obtain a good seal on the bag mask valve and appropriately oxygenate the athlete because of the unstable nature of the facial injuries. However, multiple supraglottic airway devices exist to maintain airway patency for oxygenation in these situations (**Fig. 2**).

However, these measures are only temporizing, because hemorrhage and vomitus can still obstruct the airway. Therefore, it is critical to recognize the potential for airway compromise and arrange the patient's transfer to the nearest emergency department to achieve a definitive airway. If the patient is conscious and can clear secretions by providing a cough reflex, progress immediately to step B.

BREATHING

Hemorrhage, vomitus, and secretions associated with facial injuries can lead to aspiration and hypoxia, so initial assessment is focused on the patient's ability to produce

Fig. 1. Modified jaw thrust. Place 2 fingers superior and posterior to the angle of the mandible in the soft spot anterior to the mastoid process. Pull forward on the mandible to relieve airway obstruction. This maneuver is modified such that it does not involve manipulation of the cervical spine. (*Courtesy of* the Mayo Clinic Foundation, Rochester, MN; with permission.)