

tomy may do more harm than good. Thus, some authors believe that cricothyroidotomy is contraindicated in this situation.³ Even in the most active trauma centres, surgeons do not perform emergency surgical airways often. In the Ryder Trauma Center at the University of Miami/Jackson Memorial Medical Center, 3500 severe trauma cases are seen in the Resuscitation Area each year. The airway of these patients is secured if needed by a trauma anesthesiologist. Since the opening of the Ryder Trauma Center in August 1992, only eight emergency surgical airways have been performed. Five were performed in the pre-hospital setting by the paramedics and only three were performed in the resuscitation room when the trauma anesthesiologist was unable to secure the airway (incidence <0.1%).

From August 1992 to December 1995, we have treated 346 cases of penetrating trauma to the neck, 106 in 1995 alone. In this group, eight patients died in the resuscitation room, all had their airway secured with orotracheal intubation. At autopsy, only one had a tracheal injury (cricoid cartilage fracture). The cause of death was exsanguination in six patients and central nervous injury in two patients. Of the survivors with penetrating injuries to the neck, in 54 (16%) the trachea had to be intubated for complete or impending airway obstruction. Only one required a surgical airway which was extremely difficult. This patient sustained a gunshot wound to the neck with a common carotid artery transection and a massive haematoma. Among the more stable patients, 106 (31%) came to the operating room for a neck exploration. Vascular injuries were very common but 23 patients had an extrathoracic tracheal injury. We were unable to find any complications attributable to the airway management.

It is stated that the entrance wounds and the presenting symptoms are poor predictors of the extent of injury.³ In one series, 66% of patients with penetrating laryngotracheal injuries had no voice alterations.⁴ The absence of symptoms cannot be used to guide the anaesthetist in his approach to control the airway. Our practice is to consider all penetrating injuries to the lateral and anterior neck as potential laryngotracheal injuries and manage the airway accordingly. When managing a patient with a penetrating neck injury, the anaesthetist is confronted with three possibilities:

- 1 Emergency airway control where the airway has to be controlled in the next five minutes or the patient will probably die.
- 2 Urgent airway control where the airway must be controlled in the next 30 min.
- 3 Elective airway control for a surgical procedure (neck exploration).

In the first situation, we recommend orotracheal intubation with in-line immobilisation. In situations 2 and 3, we believe that the airway should be controlled with an orotracheal tube under direct vision with a fiberoptic bronchoscope to evaluate the larynx and the trachea.

We believe that the orotracheal route for securing the airway of the patient with an extrathoracic tracheal injury can be safely used by an anaesthetist in almost all cases even in patients with signs of airway obstruction.

Georges Desjardins MD FRCPC

Albert J. Varon MD

Division of Trauma Anesthesia and Critical Care

University of Miami School of Medicine

email: gdesjard @ umdas.med.miami.edu

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REPLY

We would like to thank Drs. Desjardins and Varon for their interest in our article on the anaesthetic management of lower airway injuries. We agree that the approach they describe to the airway management of patients with extra-thoracic tracheal injuries may be the most appropriate in their practice setting. However, we wish to propose several caveats;

- 1 Airway management in patients with impending airway obstruction should be undertaken only by individuals who are trained and have experience in fiberoptic bronchoscopic airway management techniques. Clearly this is not the patient population in which a new technique should be learned.
- 2 If endoscopic airway management techniques are unsuccessful, then they should be abandoned for a surgical approach to the airway.² An endoscopic technique should not delay definitive airway management in the setting of impending airway obstruction.

Our review was designed for anaesthetists in a wide variety of practice settings. If the anaesthetist does not have training and experience with the use of the bronchoscope, or the appropriate equipment is not immediately available in the trauma resuscitation area, then the management of the extra-thoracic tracheal injuries as outlined in our article remains the most appropriate method. In a practice setting such as that described by Desjardins and Varon, where the anaesthetist is experienced with endoscopic airway management techniques and appropriate equipment is available, the method of airway management proposed by the authors would seem to be ideal.

We wish to clarify one last issue. Extension of the neck is not a prerequisite for tracheostomy. Many of the tracheotomies at our institution are performed on patients in rigid fixation because of spinal injuries.

J. Hugh Devitt MD MSc FRCPC

Bernard R. Boulanger MD FRCSC FACS

Trauma Program

Sunnybrook Health Science Centre

University of Toronto, Toronto, Ontario

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