

MANDATORY CRICOTHYROIDOSTOMY IN LARYNGOTRACHEAL  
INJURY

Ghazi-Saidi

Laryngotracheal injuries have been reported, frequently due to road traffic accidents, and rarely as a result of job related injuries. The following is a case report of an accidental strangulation of a man that occurred while he was working in a lumber mill.

REPORT OF THE CASE

A 50-year-old man who had neck injury was brought to the emergency room on October 14, 1978. His injury had occurred two hours earlier when his shirt was accidentally caught from the back by the rotating axle of a sawblade. His shirt was tautly wrapped around his neck and caused severe injury of the neck. The patient was finally freed from the machine. Consciousness was not lost and difficulty in breathing was gradually experienced.

Upon arrival to the emergency room he was in moderate respiratory distress. His chief complaints were a moderate pain in the neck, shortness of breath, loss of

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Anaesthesiology Department, Imam Khomeini  
Hospital, Faculty of Medicine, University of  
Tehran

possible cervical tracheal injury.<sup>2-3</sup>

Tracheostomy, which is preferred by Ogura<sup>3</sup>, seems to be a better choice for the management of the above patient, when shortly after admission to the emergency room his respiratory problem was increasing. There was, however, no surgeon available to perform an emergency tracheostomy. Therefore, oral intubation was tried, which deteriorated the condition of the patient, and caused cardiorespiratory arrest. Therefore, a cricothyroidostomy through the skin incision was performed for establishing an emergency open airway.

Insertion of a 12-gauge angiocath needle into the cricothyroid membrane is a quick way of relieving a severe upper airway obstruction.<sup>4</sup> This could not, however, be employed in this case, because the neck of the patient was severely emphysematous. Furthermore, blind needle insertion into the trachea of the patient could have caused even more damage to his already traumatized trachea. So cricothyroidostomy was thought to be the safest way for saving the above patient.

According to Stephenson<sup>5</sup> cricothyroidostomy is a simple and easy procedure that can be performed by a non-surgeon with a minimal number of instruments when there is no sufficient time to perform an emergency tracheostomy. The closest access, in attempting to perform a cricothyroidostomy, is between the thyroid cartilage (Adam's apple) and the cricoid cartilage, just beneath it. In this area, only skin, subcutaneous tissue, and cricoid membrane separates the airway from the surface. An opening in this area avoids the vascular structures, thyroid gland, muscles, and subcutaneous tissues that separate the skin from the trachea in the area of a cl-

assic tracheostomy.<sup>5</sup>

For performing an emergency cricothyroidostomy a support should be placed beneath the patient's shoulder so that his neck is extended. The skin between the thyroid and cricoid cartilages should be secured, after which a sharp scalpel blade or knife should be inserted about 1 to 1½ inches. A cannula measuring 3/16 to 1/4 inch should then be inserted.<sup>5</sup> Cricothyroid membrane tends to stenose following removal of the cannula that is left in place over 8 to 12 hours. Brantigan et al who studied 655 cricothyroidostomy have not reported any significant subglottic stenosis following cricothyroidostomy.<sup>6</sup> For further information it is better to be added here, the name of two of the instruments devised for quicker performance of cricothyroidostomy: a cricothyroidostome that could be quickly forced into the trachea,<sup>7</sup> and a kind of pocketknife with blade and cannula.<sup>5</sup>

#### CONCLUSION

In an emergency situation, whenever oral and nasal intubation is not possible, familiarity with rapid cricothyroidostomy can be helpful in relieving the patient from upper airway obstruction.

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