CORRESPONDENCE

Tracheal transection caused by clothesline injury

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A 30-year-old motorcyclist was referred to our emergency department after he struck his neck on a rope at night. Apart from mild dyspnea and hoarseness, his vital signs were stable. There was a 7-cm shallow laceration across the lower neck with erythematous welt (Fig. 1A). Subcutaneous emphysema from the lower neck to the upper chest wall with palpable crepitus was also found. Fiberoptic laryngoscope revealed bilateral vocal folds palsy with intact endolaryngeal structures. Plain radiographs of chest and neck revealed subcutaneous emphysema mainly at the left lower neck without pneumomediastinum or pneumothorax. Due to suspicion of clothesline injury, airway was established by awake fiberoptic nasotracheal intubation. Sagittal reformatted computed tomographic (CT) image showed discontinuity of the cervical trachea (Fig. 1B). Axial CT view disclosed a retracted distal portion of the trachea with ragged border and posterior displacement (Fig. 1C). Surgical exploration further confirmed complete tracheal transection (Fig. 1D). Severed left recurrent laryngeal nerve was identified while debriding soft tissue injury at the left neck without great vessels, thyroid gland, and esophagus involvement. Right recurrent laryngeal nerve was not searched because the right neck was relatively intact. Primary repair of tracheal disruption and end-to-end anastomosis of the left recurrent laryngeal nerve with 10-O nylon were performed immediately. Tracheostomy was created at the transection level. He was decannulated 1 month later with sufficient airway. The nasogastric tube was initially placed for 2 months to prevent easy choking. Although his voice remained breathy due to persistent bilateral vocal folds immobility, the patient did not complain about dysphagia or dyspnea after 1 year follow-up, and gastro-esophagoscopy revealed no esophageal stricture.

This is a typical case of "clothesline injury", which belongs to a specific entity of blunt laryngotracheal trauma. The incidence of laryngotracheal trauma is reported in less than 0.04% of major trauma center visits.1 Clothesline injury is even rarer but life-threatening. The shearing force with hyperextension of neck commonly leads to cricotracheal transection.2 The nonspecific symptoms such as hoarseness, hemoptysis, dyspnea, dysphagia, and anterior neck pain correlate poorly with the severity of injury. Although most patients die immediately after trauma from asphyxiation, the symptoms may be subtle and overlooked even in complete tracheal transection. In clinical practice, we should keep a high index of suspicion of laryngotracheal disruption if bilateral vocal folds palsy and subcutaneous emphysema are present. Prompt airway control is the primary goal of initial management. Controversy as to whether tracheotomy or intubation is a better airway management option still exists. Generally, tracheotomy under local anesthesia is most acceptable. Blind advancement of the orotracheal tube is at risk of complete tracheal transection in unwitting laryngotracheal injury. Awake fiberoptic nasotracheal intubation is a safer option to pass the endotracheal tube through the site of tracheal

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disruption.\textsuperscript{3} Findings of plain radiographs provide clues of airway rupture, while CT plays a more important role in evaluating laryngeal injury. There are specific CT signs that suggest laryngotracheal separation, except for certain findings, as mentioned in our case; others are abrupt dilated airway caliber with gross subcutaneous emphysema and false lumen with misplaced endotracheal tube.\textsuperscript{4} Early exploration, debridement, and primary repair are the mainstay to minimize local infection and long-term complications such as airway granuloma and subglottic stenosis.\textsuperscript{5}

References