

Endotracheal Intubations Related Tracheal Injury

Chien-Ming Chao¹ · Chu-Li Tu² · Wei-Ting Lin³

¹ Department of Intensive Care Medicine, Chi Mei Medical Center, Liouying, Tainan, Taiwan

² Department of General Surgery, Chi Mei Medical Center, Tainan, Taiwan

³ Department of Orthopedics, Chi Mei Medical Center, Tainan, Taiwan

Keywords: Endotracheal intubation, tracheal injury

Dear Editor,

An 88-year-old woman presented to our emergent department with sudden onset of respiratory distress and cold sweating after witness choking. On arrival, her consciousness became like unclear and her vital signs were as: temperature of 35.9°C, pulse rate of 86/min, respiratory rate of 20/min, and blood pressure of 131/94 mmHg. The pulse oximeter showed the SpO₂ as only 77% on ambient air. Emergent endotracheal intubation was performed for acute hypoxic respiratory failure. However, the process of intubation was not smooth. The endotracheal tube was finally inserted by a senior doctor after two attempts. After several minutes, subcutaneous emphysema developed and chest radiography showed extensive subcutaneous emphysema and pneumothorax on the right side (Figure-1). Further computed

tomography (CT) confirms the presence of pneumomediastinum, right pneumothorax and diffuse subcutaneous emphysema over neck, chest and abdominal wall (Figure-2). Emergent pleural drainage was done for right pneumothorax. Under impression of tracheal injury, bronchoscopic examination was done and showed a tiny perforation over the carina (Figure-3). After condition stabilized, she was admitted to intensive care unit. Thereafter, the subcutaneous emphysema and pneumothorax gradually resolution and respiratory condition improved during ICU hospitalization. Finally, she was successfully extubated two weeks later and uneventfully discharged three weeks later.

The entotracheal intubation is a life-saving intervention for patients with acute respiratory failure. However, this procedure can also be

Corresponding Author: Wei-Ting Lin, MD; Department of Orthopedics, Chi Mei Medical Center, Tainan, Taiwan

E-mail: aapriliaa@gmail.com

Received: June 27, 2018 **Accepted:** Sep 19, 2018

Published: Dec 29, 2018

This is an Open Access Article distributed under the terms of Creative Commons Attribution Non-Commercial License which permits unrestricted non-commercial use, distribution, and reproduction in any area, original work is properly cited.

The Ulutas Medical Journal © 2018



associated with several complications, such as tracheobronchial rupture. In one systematic review, the prevalence of the endotracheal intubation associated with tracheobronchial injury was reported to be 27.4% of all kinds of the tracheobronchial injury (1).



Figure-1. A chest X ray showed extensive subcutaneous emphysema and right pneumothorax.

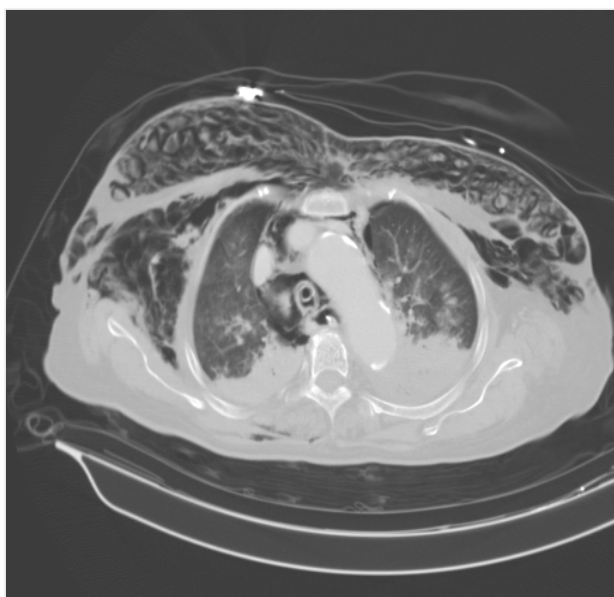


Figure-2. Computed tomography revealed the pneumo mediastinum, right pneumothorax and diffuse subcutaneous emphysema over neck, chest and abdominal wall.

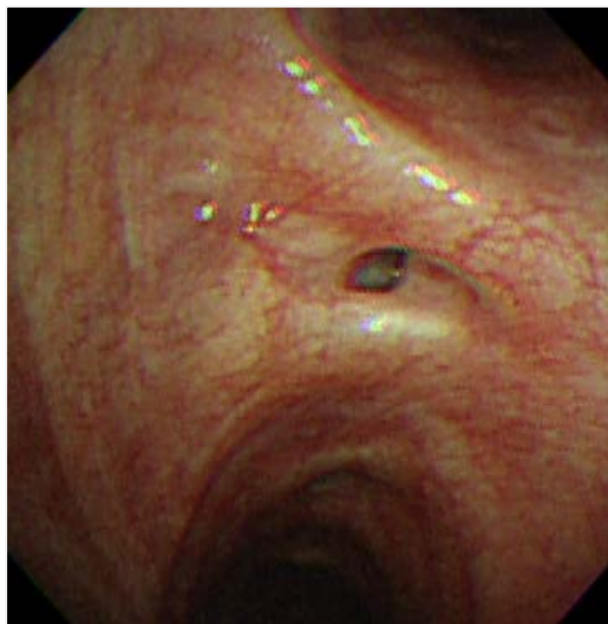


Figure-3. A bronchoscope examination showed a tiny perforation over the carina.

The possible mechanisms included trauma during intubation, overinflation of cuff, and some anatomical factors (2). Common clinical presentations are subcutaneous emphysema, mediastinal emphysema, and pneumothorax after intubations. In most cases, conservation treatment can achieve favorable outcomes, but surgical repair should be always considered if the clinical condition doesn't improve.

Conflict of Interests

The authors declare that they have no conflict of interest in the letter.

Reference

1. Chao Miñambres E, Burón J, Ballesteros MA, Llorca J, Muñoz P, González-Castro A. Tracheal rupture after endotracheal intubation: a literature systematic review. *Eur J Cardiothorac Surg.* 2009 Jun;35(6):1056-62.
2. Marty-Ané CH, Picard E, Jonquet O, Mary H. Membranous tracheal rupture after endotracheal intubation. *Ann Thorac Surg.* 1995 Nov;60(5):1367-71.

How to cite?

Chao CM, Tu CL, Lin WT. Endotracheal Intubations Related Tracheal Injury. *Ulutas Med J.* 2018; 4(4):202-203

DOI: [10.5455/umj.20180718071713](https://doi.org/10.5455/umj.20180718071713)