

LETTER

# Preventing deaths related to percutaneous tracheostomy: safety is never too much!

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See related research by Simon *et al.*, <http://ccforum.com/content/17/5/R258>

We read with great interest the study by Simon and colleagues about intra- and post-procedural mortality related to percutaneous dilational tracheostomy (PDT) [1]. We appreciated the huge efforts made by the authors to collect valuable data on this rare event: their findings can significantly improve daily practice in PDT performance and management in the ICU. We present three additional comments.

First of all, the authors affirmed that a standard use of ultrasound neck evaluation and continuous bronchoscopy could reduce the incidence of bleeding and airway complications, respectively. However, it must be underlined that the most common intra-procedural cause of death reported in this study was pneumothorax. Thus, the complete or almost complete tracheal occlusion by dilators or the bronchoscope should be minimized to avoid air trapping. Moreover, the safest ventilatory setting while PDT is performed is unknown, and research on this topic is urgently needed. Air trapping within the lungs (a potential cause of overinflation and pneumothorax), caused by a valve effect while performing PDT, should be carefully avoided through the adoption of lower positive end-expiratory pressure, lower respiratory rate, and smaller tidal volumes [2].

Secondly, the dislocation of the tracheal cannula is a common cause of late mortality: the development of a dedicated 'crisis' flowchart, the immediate availability of the required equipment, and periodic personnel retraining drills [3] should be considered similarly to other protocols already validated for emergent conditions like intubation in critically ill patients [4].

Finally, the available PDT techniques are not equally safe. Some evidence exists that the single-dilator technique is safer than the others at least intra-procedurally and could be considered the first choice [5].

#### Abbreviation

PDT: percutaneous tracheostomy.

#### Competing interests

The authors declare that they have no competing interests.

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