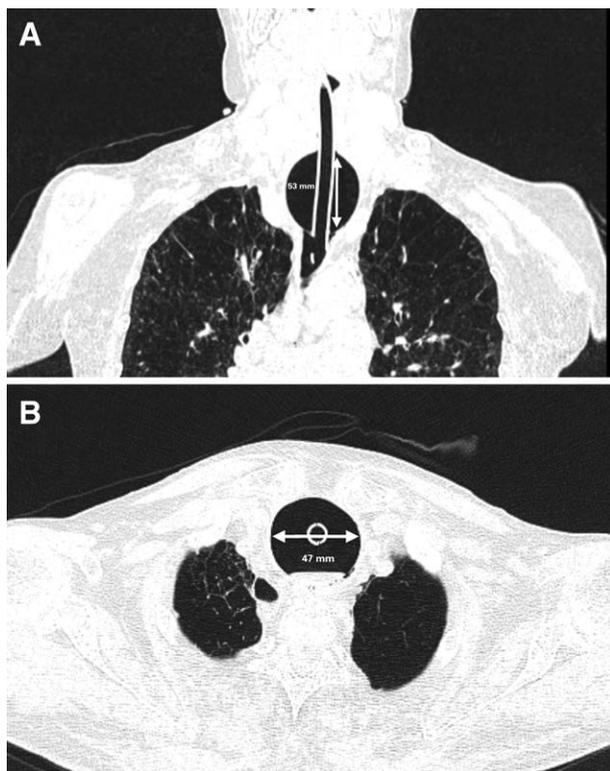


# Extreme Trachea Dilatation after Prolonged Ventilation at High Tracheal Cuff Pressure

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**A** 65-YR-OLD woman with chronic obstructive pulmonary disease and pulmonary fibrosis was intubated in the intensive care unit with a high-volume, low-pressure, polyvinyl, chloride-cuffed endotracheal tube (internal diameter 7.5). Subsequent tracheotomy was refused and on the 94th day of ventilation, computed tomography of the thorax was performed and identified the tracheal dilatation at the site of the endotracheal tube cuff (53 × 47 mm; panels A, B). On the 104th day of ventilation, a tracheoesophageal fistula was discovered at the site of the cuff by bronchofiberscope. The patient died of multiple organ failure on the 204th day of ventilation. The endotracheal tube cuff pressure was never monitored, and the presence of chronic obstructive pulmonary disease and pulmonary fibrosis necessitated high inspiratory pressure (30 to 40 cm H<sub>2</sub>O) for much of her intensive care unit stay.

Tracheal ischemic lesions are common during prolonged endotracheal intubation in the critically ill.<sup>1</sup> The recommended cuff pressure level is 20 to 30 cm H<sub>2</sub>O in adults, and if greater than 40 cm H<sub>2</sub>O, mucosal hypoperfusion, necrosis, or fistula may occur.<sup>2</sup> Measuring cuff pressure and deflating the endotracheal cuff every 8 h, or daily determination (usage) of the minimum cuff inflation volume, might reduce the probability of cuff-associated tracheal injury.<sup>3</sup> By contrast, cuff underinflation may result in ineffective ventilation and increase the risk of ventilator-associated pneumonia.<sup>2</sup>

## Competing Interests

The authors declare no competing interests.

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