End- tidal CO\textsubscript{2} monitoring: A way to relocate and confirm the lost tracheostomy tract!

Surya K. Dube, Gyaninder P. Singh, Ranadhir Mitra

Department of Neuroanaesthesiology and Critical Care, All India Institute of Medical Sciences, New Delhi, India

Address for correspondence:
Dr. Gyaninder Pal Singh,
Department of Neuroanaesthesiology and Critical Care,
All India Institute of Medical Sciences, New Delhi, India.
E-mail: drsingh_gp@yahoo.co.in

REFERENCE


A 63-year-old female, weighing 84 kg, was operated for left temporo-parietal glioma. In the postoperative period, she developed infarction in the left temporo-parietal region and had poor Glasgow Coma Score (E\textsubscript{2} V\textsubscript{3} M\textsubscript{3}). Since the patient required prolonged mechanical ventilation, the decision for tracheostomy was taken. However, as the patient had a short neck along with large submandibular fatty tissues, an elective surgical tracheostomy in the operating room was planned.

The procedure was carried out under local anaesthesia with continuous monitoring of heart rate, blood pressure, oxygen saturation and end-tidal carbon dioxide (ETCO\textsubscript{2}). Following skin incision, retractors were applied, and dissection of soft tissue was completed. The trachea was identified, and an opening was made on the tracheal wall. After suctioning of the oral cavity and oropharynx, the endotracheal (ET) tube cuff was deflated and ET tube was withdrawn slowly (while watching the ET tube through the opening made in the tracheal wall), till its lower end passed just proximal to the opening made in the tracheal wall. However, before passing the tracheostomy tube into the trachea through the tracheal wall opening, the retractors slipped and got displaced and thus the tracheostomy tract was lost. In spite of repeated efforts, the tracheal opening could not be relocated. Meanwhile, sliding of the ET tube back to its position into the trachea was attempted but was unsuccessful though ventilation of the patient through the ET tube with circuit and reservoir bag was possible (though not satisfactory). While ventilating the patient with 100% oxygen using bag and circuit, we observed visible gas leak through the dissected neck tissue. Suctioning was done through the probable tracheostomy tract and to locate the trachea we attempted to pass a 4.0 mm size ET tube through the point of the gas leak and succeeded. The ET tube was then connected to the ETCO\textsubscript{2} monitor, and the CO\textsubscript{2} trace confirmed the placement of ET tube in the trachea. Then, a well lubricated 7.5 mm tracheostomy tube was railroaded over the 4.0 mm ET tube into the trachea after removing the tube connector. Finally, the ET tube was removed, and the tracheostomy tube was connected to the ETCO\textsubscript{2} monitor. A sustained ETCO\textsubscript{2} curve and visible chest rise confirmed the correct position of the tracheostomy tube and the tracheostomy tube was secured.