Endotracheal Tube Obstruction after Orogastic Tube Placement

Robert M. Pousman, D.O.,* Stephen M. Koch, MD,†

THE placement of a gastric suction tube is a common practice in the operative suite and in the intensive care unit (ICU) and rarely results in a complication. Reports of pulmonary complications associated with gastric tube placement center around their insertion into the tracheobronchial tree.1-3 Cases of gastric tubes entangled with endotracheal tubes (ETT), producing restriction of gas flow, are rare.4 We present a patient with airway compromise resulting from an orogastric tube knotted around the ETT and requiring emergent reintubation.

Case Report

A 46-yr-old woman was transferred to our facility for treatment after a self-inflicted gunshot wound to the head. At the scene, her Glasgow Coma Score was 7, and her trachea was intubated orally. Physical examination revealed right parietal entrance and left parietal exit wounds with bilateral hemotympanum. In the ICU, an orogastric tube (OGT) was placed to relieve gastric distention. The oral route was chosen because of concern for a possible basilar skull fracture. After placement of the OGT, the epigastrium was auscultated with no sounds heard with air insufflation. The OGT was partially withdrawn and reinserted. The OGT was then placed on wall suction with no output noted and again, repositioned without removal. Resistance was noted whenever the OGT was withdrawn or advanced with concomitant movement of the ETT. At this time, the high pressure alarm on the ventilator sounded revealing peak airway pressures of 50 cmH2O. Arterial pulse oximeter alarmed and oxygen saturation decreased to 88%. An attempt to pass a suction catheter through the ETT was unsuccessful. The patient was disconnected from the ventilator, and bag ventilation was attempted, but no air movement was noted. While extubating the patient, the OGT also was removed. The patient was easily reintubated using direct laryngoscopy, which revealed no abnormalities of the vocal cords or laryngeal structures. She was then placed back on mechanical ventilation with normal airway pressures, and bilateral chest expansion was noted. After clinical stabilization, the ETT was inspected and found to have the OGT knotted around the distal end, thus constricting the lumen (fig. 1).

Discussion

Insertion of gastric tubes into the tracheobronchial tree has been reported and may cause pulmonary complications, especially if left unrecognized. Complications include infusion of enteral feeds, with subsequent infection, direct
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mechanical trauma to the airway, and ventilatory compromise.1-3

Other reports of ventilatory compromise after insertion of gastric tubes focus on the reduction of delivered tidal volumes. This reduction in tidal volume may be caused by a gastric tube that has been placed in the trachea past the ETT cuff with resulting decreased competency, allowing volume to escape.5 Further, negative pressure applied to a misplaced nasogastric tube also has been implicated as a cause of decreased ventilation.6,7

We have presented a case of a gastric suction tube impeding ventilation caused by knotting around the ETT. We believe that multiple manipulations of the OGT may have led to knotting. Recognition of entanglement of the OGT with the ETT was diagnosed by the concomitant tube motion when traction was applied to the OGT. The inability to pass a suction catheter through the ETT further confirmed ETT compromise and the need for intervention. This complication, ETT-OGT entanglement, needs to be recognized and managed expeditiously. Possible treatment options include the passage of an tube exchanger catheter through a patent lumen, removing the ETT and sliding a new one over the exchanger catheter, using direct laryngoscopy to cut the tube off the ETT,4 or, as in our case, extubation and reintubation.

References

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Emergent Lung Separation for Management of Pulmonary Artery Rupture

Jerome M. Klafta, M.D.*, Jeffrey P. Olson, M.D.†

PULMONARY artery (PA) rupture is an unusual but often lethal complication associated with pulmonary artery catheterization.1,2 Management of PA rupture may include lung isolation in patients requiring intubation to protect the contralateral lung and to decrease bleeding in the affected lung. Inasmuch as some airway bleeding is inevitably present, the mechanics of achieving lung isolation can be difficult using fiberoptic bronchoscopy. This case report describes an innovative, available technique that can facilitate lung isolation. We intubated the left mainstem bronchus in a patient with a ruptured right PA and copious airway blood using a technique combining bronchoscopy and fluoroscopy.

Case Report

A 66-year-old man with a history of non-insulin-dependent diabetes, hypertension, and atrial fibrillation status post-ablation undergoing a diagnostic right and left heart catheterization for complaints of shortness of breath and peripheral edema. Shortly after inflation of the balloon of the pulmonary artery catheter, which was positioned in the right lung, the patient experienced hemoptysis and hypotension. The presumptive diagnosis of a right pulmonary artery rupture was made.