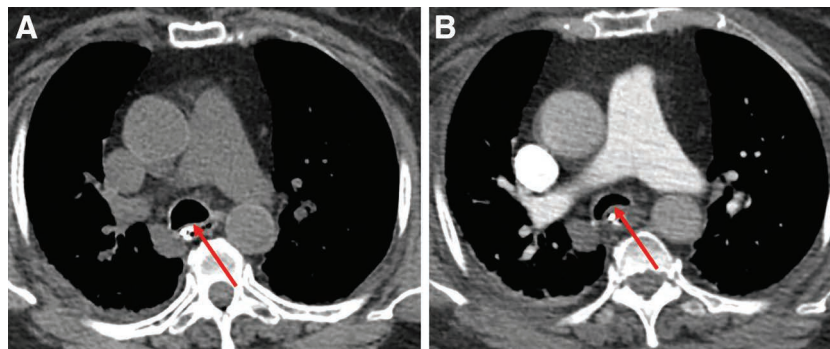


Excessive Dynamic Airway Collapse with Induction of Anesthesia

Emily L. Sturgill, M.D., Samantha A. Malamet, D.O., Joshua D. McCarron, M.D., Cameron W. McLaughlin, D.O.



A 74-yr-old woman undergoing esophagogastroduodenoscopy experienced severe airway obstruction after initiation of sedation. This rapidly progressed to profound hypoxia resistant to jaw thrust, two-provider mask ventilation, paralysis, and intubation. We present an incidental computed tomography finding in this intubated and sedated patient with no known pulmonary disease. During the inspiratory phase of volume-controlled mechanical ventilation, the study revealed unremarkable tracheal anatomy, whereas the expiratory phase exhibited posterior wall bowing and luminal narrowing from 12mm (fig., panel A) to 4.2mm (fig., panel B) in diameter. This dynamic reduction of 50% or greater cross-sectional area is characteristic of expiratory central airway collapse.

Expiratory central airway collapse is a rare cause of airway obstruction encompassing excessive dynamic airway collapse and tracheobronchomalacia.¹ Chronic obstructive pulmonary disease and asthma are the most common comorbidities.¹ Patients are usually asymptomatic until stenosis becomes severe (greater than 90%).² Initiation of sedation or induction of anesthesia may result in life-threatening central airway collapse. Fiber-optic bronchoscopy aids in differentiating dynamic collapse from compressive pathologies such as esophageal or tracheal malignancy, mediastinal mass, intrathoracic cyst or abscess, and vascular malformation.¹ Short-term management includes advancement of the endotracheal tube past the obstruction, reversal of paralytic agents restoring spontaneous ventilation, avoidance of bronchodilators, application of positive end-expiratory pressure, and positional changes

that reduce the gravitational effect.¹ Long-term management includes treatment of underlying conditions, noninvasive positive pressure ventilation, airway stenting, and surgical stabilization.³ Although uncommon, expiratory central airway collapse should be considered on the differential for ventilatory difficulty and refractory hypoxia after the induction of anesthesia.

Competing Interests

The authors declare no competing interests.

Correspondence

Address correspondence to Dr. Sturgill: emily.sturgill@gmail.com

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Emily L. Sturgill, M.D.: Mike O'Callaghan Military Medical Center, Las Vegas, Nevada.

Samantha A. Malamet, D.O.: Mike O'Callaghan Military Medical Center, Las Vegas, Nevada.

Joshua D. McCarron, M.D.: Mike O'Callaghan Military Medical Center, Las Vegas, Nevada.

Cameron W. McLaughlin, D.O.: Pulmonary/Critical Care, Mike O'Callaghan Military Medical Center, Las Vegas, Nevada

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