

When the airway fights back: a case of tracheal stenosis masquerading as asthma

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DOI: 10.24911/SJEMed.12-2601

Introduction: Tracheal stenosis is an uncommon yet clinically significant condition that may remain unrecognized until the airway instrumentation is attempted, at which point it can precipitate acute airway compromise and life-threatening hypoxia, with presentations frequently mimicking more common respiratory pathologies and resulting in delayed diagnosis, particularly in patients with predisposing risk factors.

Case: A 33-year-old patient with multiple comorbidities, including hypertension, diabetes mellitus, dyslipidemia, dilated cardiomyopathy with reduced ejection fraction, and a recent left middle cerebral artery infarct complicated by hemorrhagic transformation following thrombolysis, presented with acute respiratory distress following a two-week history of productive cough and sudden worsening dyspnea with chest tightness, in the context of active vaping. On presentation, the patient was markedly tachypneic, assumed a tripod position, and demonstrated reduced air entry with generalized rhonchi. Point-of-care lung ultrasound revealed an A-profile without pleural effusion, while bedside echocardiography showed hyperdynamic cardiac function. Initial management with bi-level positive airway pressure ventilation and continuous bronchodilator therapy was instituted; however, clinical deterioration ensued with worsening hypercapnia and reduced level of consciousness, necessitating emergency intubation. Despite satisfactory glottic visualization on direct laryngoscopy, repeated intubation attempts failed due to significant resistance encountered immediately below the vocal cords in the absence of overt upper airway edema. Effective ventilation was maintained while preparing for front-of-neck access, and successful intubation was ultimately achieved using a staged bougie-assisted technique followed by insertion of a smaller uncuffed endotracheal tube. Post-intubation assessment demonstrated clear lung fields with equal air entry, and subsequent computed tomography of the neck revealed diffuse thickening and narrowing of the upper airway extending from the oropharynx to the proximal trachea, consistent with tracheal stenosis. **Discussion:** This case illustrates how tracheal stenosis may present as an unexpected cause of difficult intubation despite adequate laryngeal views and highlights the risk of misdiagnosis as lower airway pathology in patients with relevant risk factors. **Conclusion:** Tracheal stenosis should be considered in cases of unexplained subglottic resistance during intubation, and early suspicion, flexible airway strategies, and multidisciplinary coordination are essential to minimize complications and ensure patient safety.

Keywords: Difficult intubation, tracheal stenosis, airway management, video laryngoscopy, subglottic obstruction.