Incidental Finding of Tracheal and Bronchial Stenosis in a Woman Undergoing Surgery

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BACKGROUND

A 51-year-old female with a history of well controlled asthma without recent exacerbations presents for robotic hysterectomy due to a newly diagnosed pelvic mass.

CASE DESCRIPTION

General anesthesia was induced uneventfully, and the patient was intubated with a 7.0 ET tube taped at 21cm at the lip. Saturation was noted to be 98% on 50% FiO2 at the start of the case. During the surgery, she was placed in steep Trendelenburg position and saturation dropped to mid 80's. Tube position had not changed, and breath sounds were clear bilaterally. Saturation mildly improved with recruitment maneuvers.

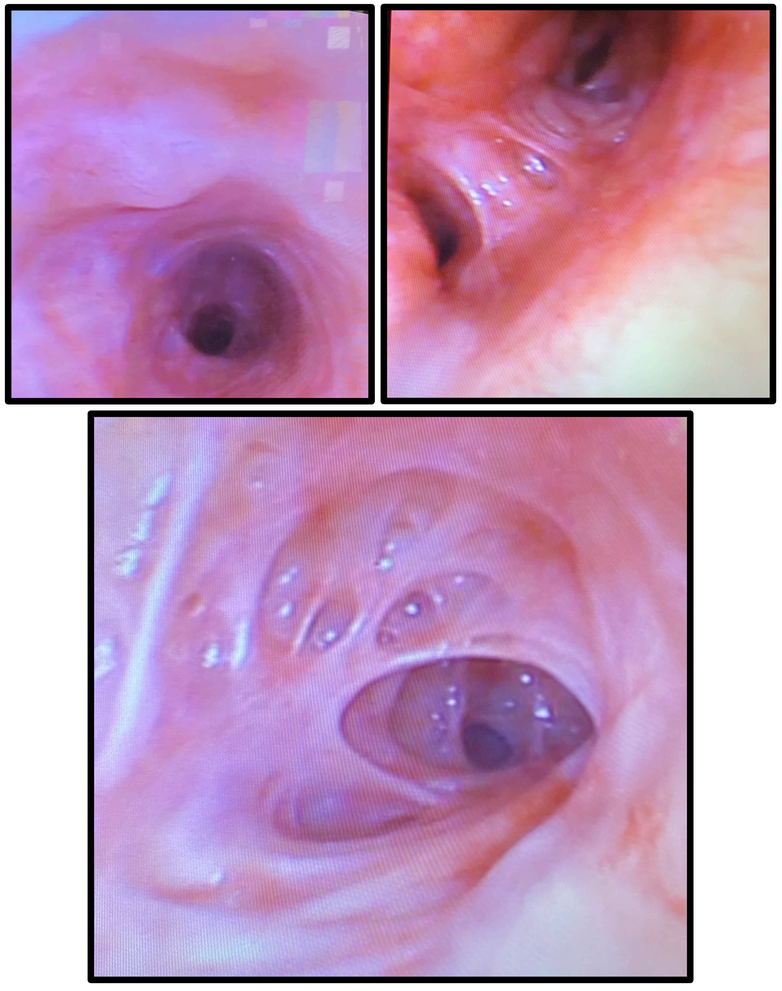
DIFFERENTIAL DIAGNOSIS

- Atelectasis
- Circuit malfunction
- Mainstem intubation
- Reduced chest wall compliance
- Bronchospasm
- Mucus plug
- Pneumothorax
- Anaphylactic reaction

WORKUP

Further examination with fiberoptic bronchoscope revealed the trachea had an irregular bumpy appearance with mild distal stenosis, and the right mainstem bronchus and bronchus intermedius had Cotton-Myer grade II stenosis. There was also diffuse webbing throughout the bronchial tree. Chest CT scan did not show any evidence of malignant disease and postoperative rheumatologic workup was negative.

IMAGES



DISCUSSION

Idiopathic tracheal and bronchial stenosis are rare disorders that are diagnoses of exclusion, characterized by airway narrowing without an identifiable cause such as prior infection, prolonged tracheal intubation, trauma, gastroesophageal reflux disease (GERD), chemical or inhalation injury, neoplasm, autoimmune or granulomatous disease, or congenital abnormalities. These benign airway stenoses may produce symptoms resembling other obstructive pulmonary diseases, often resulting in delayed diagnosis.

CONCLUSIONS

If not recognized early and managed appropriately, idiopathic bronchial stenosis can lead to serious complications, including recurrent infections, post obstructive atelectasis, bronchiectasis, and in rare cases, irreversible loss of pulmonary function that may necessitate lobectomy or pneumonectomy.

Treatment is individualized and may include bronchoscopic interventions like dilation or stenting, surgical resection, lung transplantation, or corticosteroid therapy when inflammation is present. Early recognition and involving specialized multidisciplinary airway team are essential for ensuring accurate diagnosis, selecting the appropriate management strategy, and avoiding unnecessary or potentially harmful procedures that could worsen the clinical course.

BIBLIOGRAPHY

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