

Tracheoinnominate Artery Fistula Presenting as Recurrent Airway Obstruction: A Case Report

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Introduction

Tracheo-innominate artery fistula (TIAF) is a rare but life-threatening complication of tracheostomy, typically presenting with massive, fatal hemorrhage. While surgical intervention is the standard of care, we report a case of TIAF presenting as recurrent airway obstruction by blood clots, successfully managed through a conservative approach.

Case report

A 72-year-old female with tetraplegia due to subarachnoid and intraventricular hemorrhage, who had undergone a tracheostomy following pneumonia, was transferred to our rehabilitation center. On Day 3 after transfer, she presented with recurrent bloody secretions and episodic desaturation. On Day 10, a critical airway obstruction occurred due to thick blood clots, leading to a drop in oxygen saturation to 10% and a stuporous mental state. During emergency resuscitation, severe resistance was encountered during Ambu bagging with no air entry possible through the existing tube. Immediate tracheostomy tube replacement successfully restored oxygenation and consciousness. Computed tomography angiography subsequently confirmed TIAF. Due to the patient's fragile condition and high surgical risk, conservative management was initiated, consisting of intensive humidification and scheduled tracheostomy tube changes (Portex BLU Suctionaid, 7.0) twice weekly for three weeks, followed by a reduction to once weekly. Currently, the bleeding has ceased, and the patient is participating in low-intensity rehabilitation, including passive range-of-motion exercises, while a transition to a tracheostomy tube with an inner cannula is being planned.

Discussion

This case highlights that TIAF can present atypically as chronic oozing or recurrent blood clot obstructions rather than sudden massive hemorrhage. Clinicians should remain vigilant when encountering severe resistance during Ambu bagging alongside suction failure, as these signs indicate life-threatening mechanical obstruction requiring immediate tube replacement. Furthermore, in surgically inoperable cases, a strict protocol of frequent tube changes and airway humidification can be an effective, self-limiting treatment strategy.

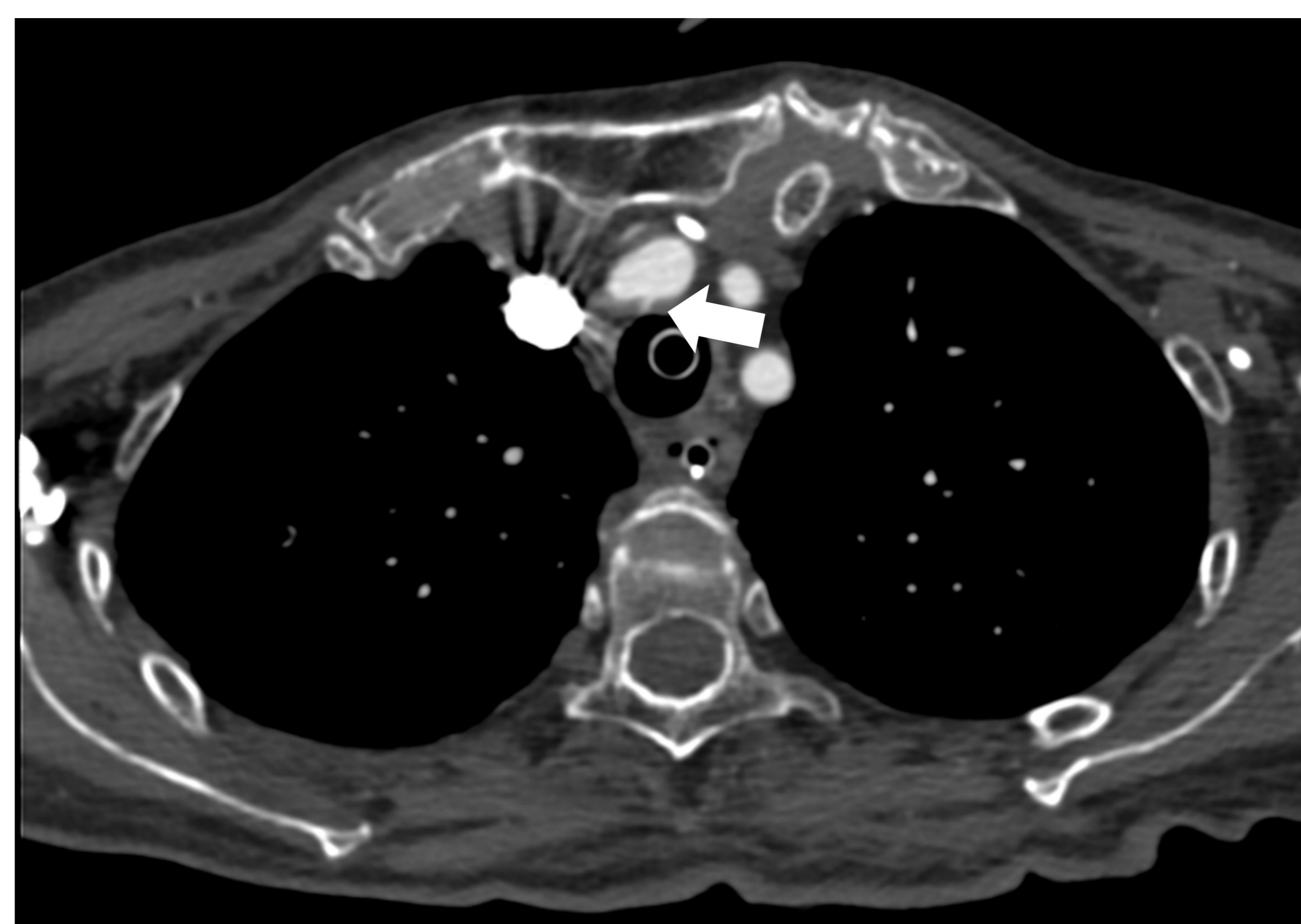


Fig.1 Contrast-enhanced chest CT scan showing a tracheoinnominate artery fistula (arrow).



Fig.2 Macroscopic view of the removed tracheostomy tube. The lumen is completely obstructed by a dense, organized bloody secretions.