

Abstract:

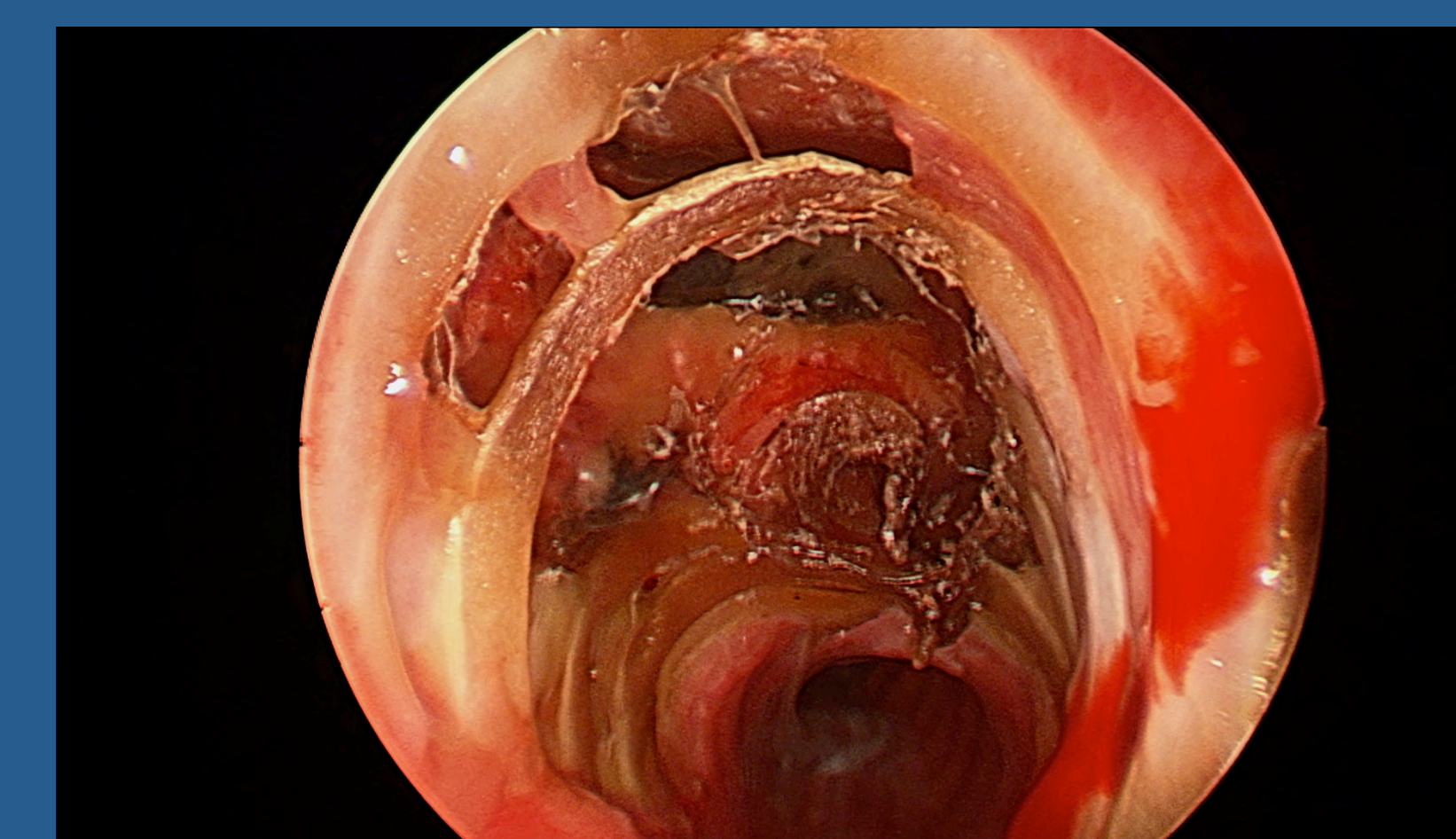
We report a case of primary B-cell thyroid lymphoma causing tracheal perforation in an elderly female who required emergent endotracheal intubation for increasing airway obstruction. After receiving one cycle of chemotherapy with rapid reduction of tumor size, she was found to have extensive anterior tracheal wall necrosis and perforation on both radiologic imaging and direct bronchoscopic examination. The tracheal perforation was managed expectantly, and the patient was successfully extubated without intervention. This is the only reported case of a patient with tracheal invasion and perforation by primary thyroid lymphoma who has subsequently survived. Due to its rare incidence there is currently no standard of care in terms of surgical management of invasive primary thyroid lymphoma causing airway obstruction. We propose that expectant management with temporary airway protection is an alternative to invasive procedures such as tracheotomy or tracheal stent placement, even in the scenario of airway perforation.

Literature Review:

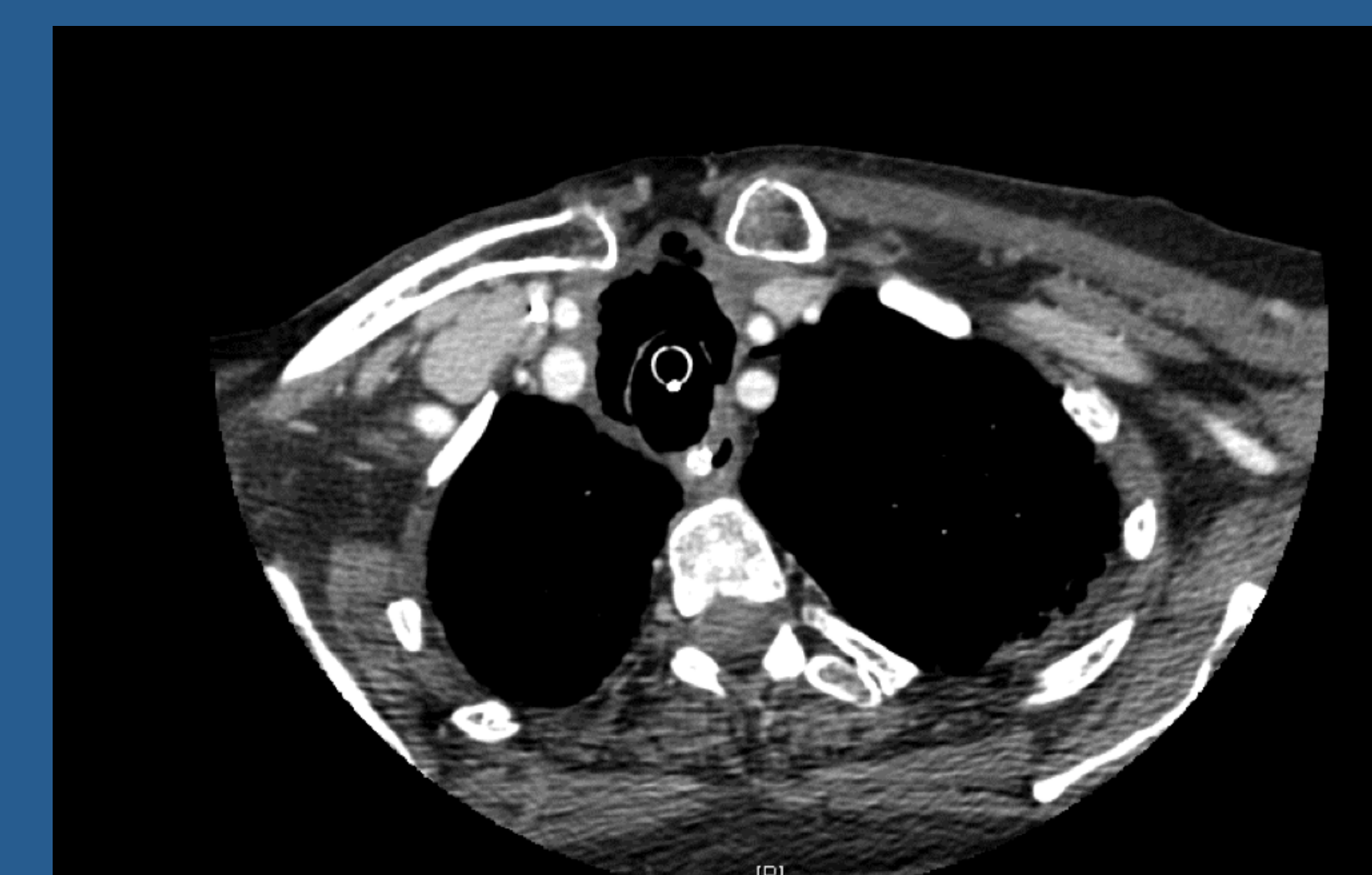
- Primary thyroid lymphoma accounts for 5% of thyroid cancers¹ and the majority are of B cell origin^{1,2}
- Majority of patients are elderly females, often with a history of Hashimoto's thyroiditis³
- Presents with a rapidly expanding, firm, anterior neck mass and is often locally invasive at presentation (60%)⁴
- Treatment is chemotherapy and external beam radiation, with surgical debulking showing no benefit⁷
- Tracheal invasion has been reported only sporadically in the literature and with poor outcomes^{4,5,9}
- Tracheotomy^{4,9} and tracheal stenting¹⁰ have been employed to stabilize the airway

Case Report:

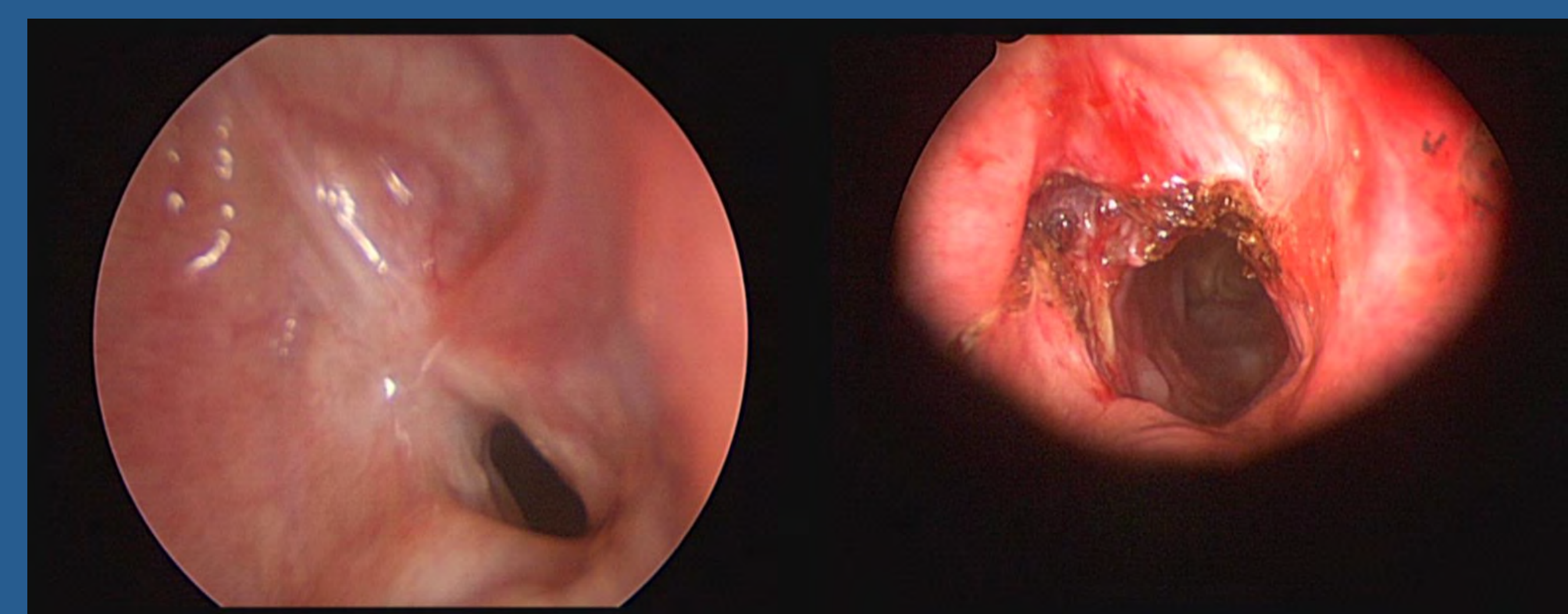
- 80 year old female with one month history of enlarging anterior neck mass
- Diffuse large B cell lymphoma of the thyroid diagnosed with excisional biopsy
- While awaiting treatment, presented to the emergency department with increasing shortness of breath and was intubated
- While intubated, modified R-CVP (Rituximab, Cyclophosphamide with 25% dose reduction, Vincristine, and solumedrol) chemotherapy regimen started with significant reduction in size of the neck mass after the first cycle
- During second cycle of chemotherapy, became difficult to ventilate with increased airway pressures
- CT neck showed a tracheal perforation at the level of the thoracic inlet with paratracheal air and pneumomediastinum
- Direct bronchoscopy revealed a defect in the anterior trachea between the 3rd and 11th tracheal rings
- Tracheal defect was managed expectantly with no reconstruction, and the patient was extubated 3 days later
- Developed no further respiratory difficulty and was discharged home
- Repeat bronchoscopy several months later revealed mucosalization of the tracheal defect and a short segment of tracheal stenosis, which was divided with CO₂ laser and balloon dilated



Anterior tracheal wall defect



CT scan showing tracheal perforation



Tracheal stenosis before and after dilation

Conclusions:

- Previously, no patient has survived tracheal perforation by primary thyroid lymphoma without surgical intervention
- The extent of perforation was characterized with imaging and direct visualization prior to extubation
- If the patient is responding to treatment and otherwise stable, tracheal perforation may be managed expectantly
- Patients require close follow up with bronchoscopy to monitor for later complications such as tracheal stenosis

References:

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