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What goes up must come down - or does it?

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INTRODUCTION

Head and neck cancer is the 7th most common cancer in the world with 1.1 million new diagnoses reported annually and 5.7%^A cancer related mortality. 90-95% of head and neck cancers are squamous cell carcinomas (SCCs). Tracheostomy tube placement facilitates long-term ventilation in patients with upper airway obstructions, such as secondary to malignant masses. Both surgical and percutaneous methods can lead to late complications such as stenosis, malacia, the formation of tracheoesophageal (TE), and tracheocutaneous fistulas. However, regurgitation of tube feeds is a lesser known complication.

CASE DESCRIPTION

Patient is an elderly male with laryngeal SCC s/p radiation therapy (2020, 2022), laryngopharyngectomy (2022) and tracheoesophageal prosthesis placement (2023), known TE-fistula, G-tube dependence on tube feeds, and chronic pain on high dose opiates presenting with copious secretions via tracheostomy thought to be secondary to malignancy. He experienced ejection of his prosthesis in 2023 after an episode of severe coughing. Several days prior to presentation, a TE salivary bypass was placed to promote TE fistula healing. He re-presented to the Emergency Department with displacement of TE bypass tubing, which was found protruding from his mouth, after another episode of coughing earlier in the morning. Patient had continued to receive bolus G-tube feeds with occasional regurgitation but denied history of aspiration or pneumonia. He endorsed increased oral secretions leading to severe cough, subjective hypothermia, and a sensation of neck tightness. Vitals were significant for fever of 103.2 and an O2 requirement of 8 l/min via NC. On exam, patient was non-vocal but wrote on clipboard, tracheostomy site C/D/I with trach mask in place. Labs significant for WBC 11.2, Hgb 11.4, Na 133, TSH 20.4, and T4 0.9. Patient reported that he smokes 0.5 packs a few days / week and has unknown HPV status.

IMAGES

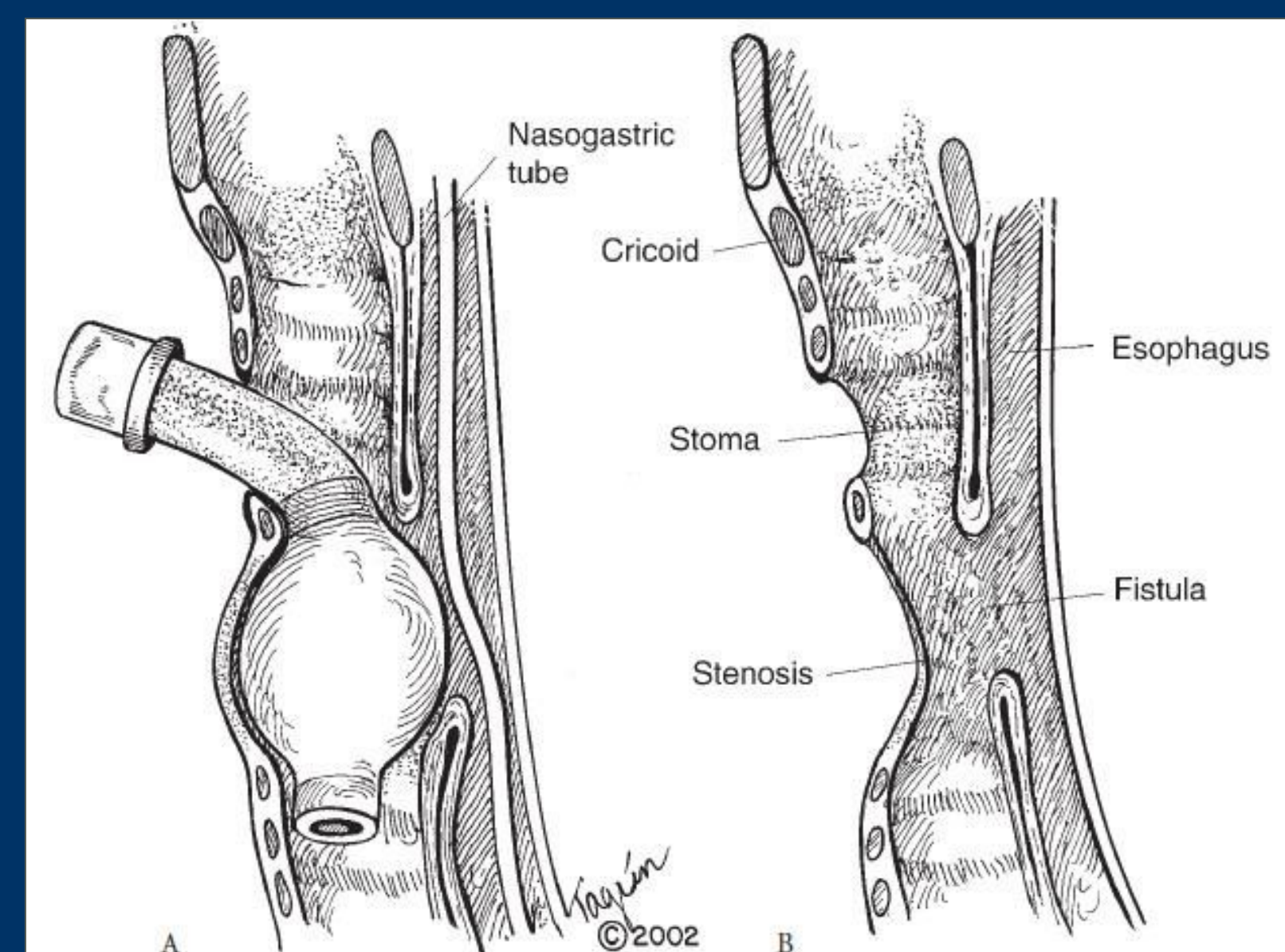


Figure 1: Tracheoesophageal fistula formation in a cannulated patient. The fistula lies few centimeters below the stoma and associates tracheal stenosis. From Grillo HC. Surgery of the tracheal and bronchi, 2004, BC Decker Inc. Hamilton London

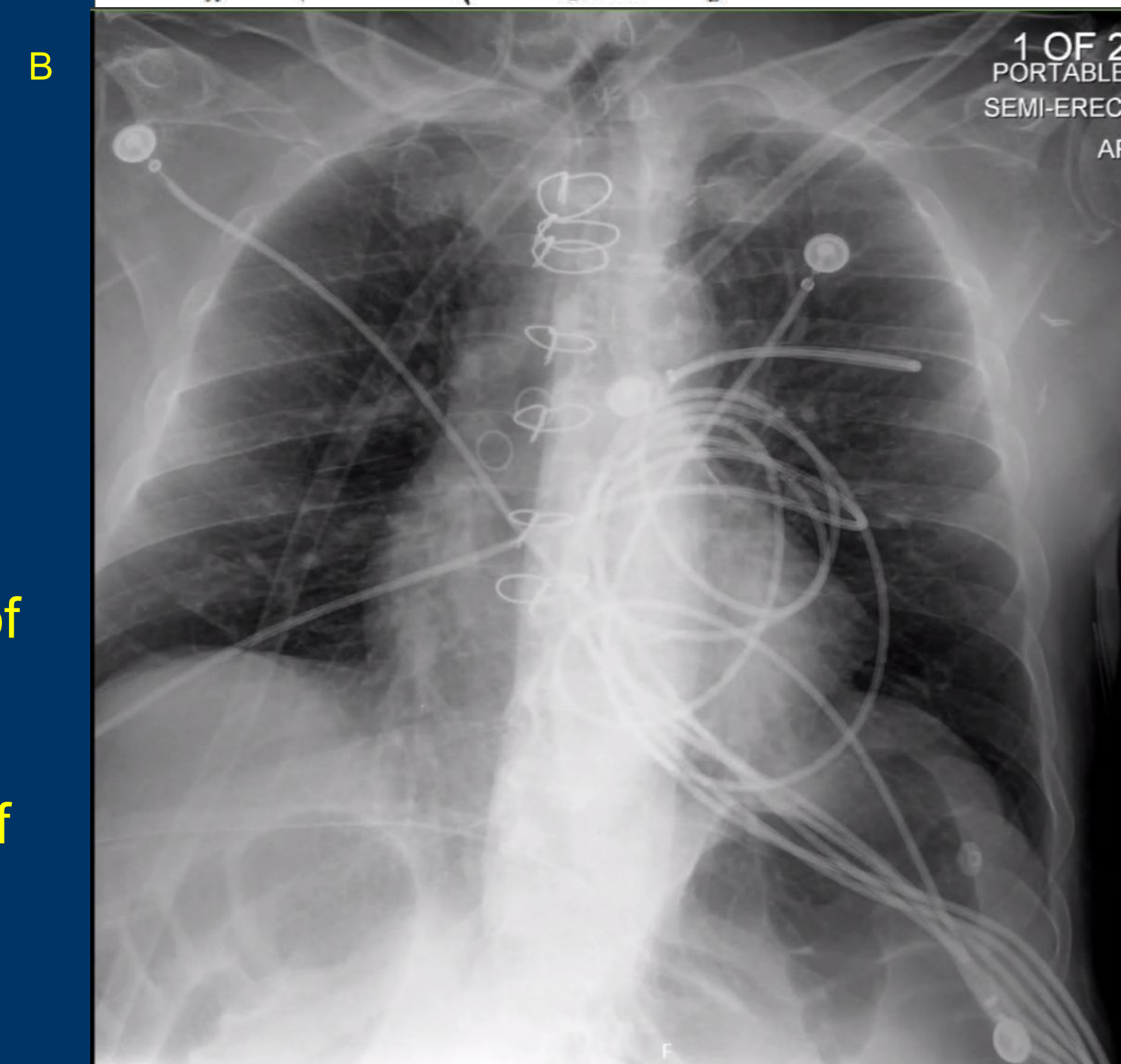


Figure 2: X-ray on admission demonstrating that the splenic flexure, originally thought to be a gastric bubble, showed massive ileus, likely secondary to opioid use and hypothyroidism.

During hospitalization, he was found to have opiate-induced ileus on KUB, causing regurgitation of tube-feed boluses through TE fistula and out of the tracheostomy. Opiates were weaned, bowel regimen was uptitrated, and tube feeds were switched from bolus to continuous, leading to complete resolution of secretions and cough. Patient was subsequently discharged with close ENT follow-up.

DISCUSSION

In patients with laryngeal cancer, treatment with larynx sparing surgery and radiation is performed when possible. Total laryngectomy leads to loss of voice, swallow, and airway protection, requiring permanent tracheostomy and feeding tube placement. These patients, such as the one presented in this case, are therefore at higher risk of overall complications from additional interventions and often require intensive pain management, which can increase the risk for ileus.

Additionally, many of these patients will experience adverse side-effects of radiation and chemotherapy, such as tissue fibrosis, lymphedema, hypothyroidism, and secondary malignancies.

This particular patient had development of a TE-fistula from prior laryngopharyngectomy and radiation, now with G-tube dependence and permanent tracheostomy, and a high dose opioid regimen with concomitant hypothyroidism, likely worsening his opiate-induced ileus. This caused severe secretions from regurgitation of his tube feeds, which in turn contributed to his cough. The patient's multiple surgical complications with expulsion were due to these underlying issues. Medical management of the patient's ileus and treatment of his hypothyroidism led to improvement of his opioid and hypothyroid induced constipation.

References

Chow LQM. Head and Neck Cancer. N Engl J Med. 2020 Jan 2;382(1):60-72. doi: 10.1056/NEJMra1715715. PMID: 31893516.

Fernandez-Bussy S, Mahajan B, Folch E, Caviades I, Guerrero J, Majid A. Tracheostomy Tube Placement: Early and Late Complications. J Bronchology Interv Pulmonol. 2015 Oct;22(4):357-64. doi: 10.1097/LBR.000000000000177. PMID: 26348694.

Lee DS, Lee JJ, Sinha P, Puram SV, Jackson RS, Adkins DR, Oppelt P, Brennenman R, Thorstad WL, Pipkorn P. Risk Factors for Functional Outcomes in Advanced Laryngeal Squamous Cell Carcinoma. Laryngoscope. 2023 Mar;133(3):594-600. doi: 10.1002/lary.30166. Epub 2022 May 25. PMID: 35611799; PMCID: PMC9691786.