Acquired Esophagobronchial Fistula in a Patient with Hodgkin's Lymphoma

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A 37-year-old male with relapsed Hodgkin's lymphoma presented with worsening dysphagia, cough, and recurrent aspiration pneumonia one month after initiating salvage chemotherapy. Chest computed tomography (CT) performed 2 months prior showed air space opacities in the right middle lobe and there was a concern for aspiration or lymphomatous involvement. At that time, workup to determine the etiology of recurrent aspiration (bronchoscopy, endoscopic evaluation of swallowing, gastric emptying, esophogram) failed to find any functional or structural abnormalities.

On admission to the hospital, chest CT revealed persistent right middle lobe consolidation, mildly prominent mediastinal and hilar lymphadenopathy, and new dilation of the distal esophagus with gas tracking through the mediastinum toward the right main stem bronchus [Figures 1A, 1B]. A repeat esophogram confirmed a fistulous track between the esophagus and right bronchus intermedius with contrast flowing into the right middle and lower lobes [Figures 1C, 1D].

Acquired esophagobronchial fistulas are uncommon, occurring most frequently in

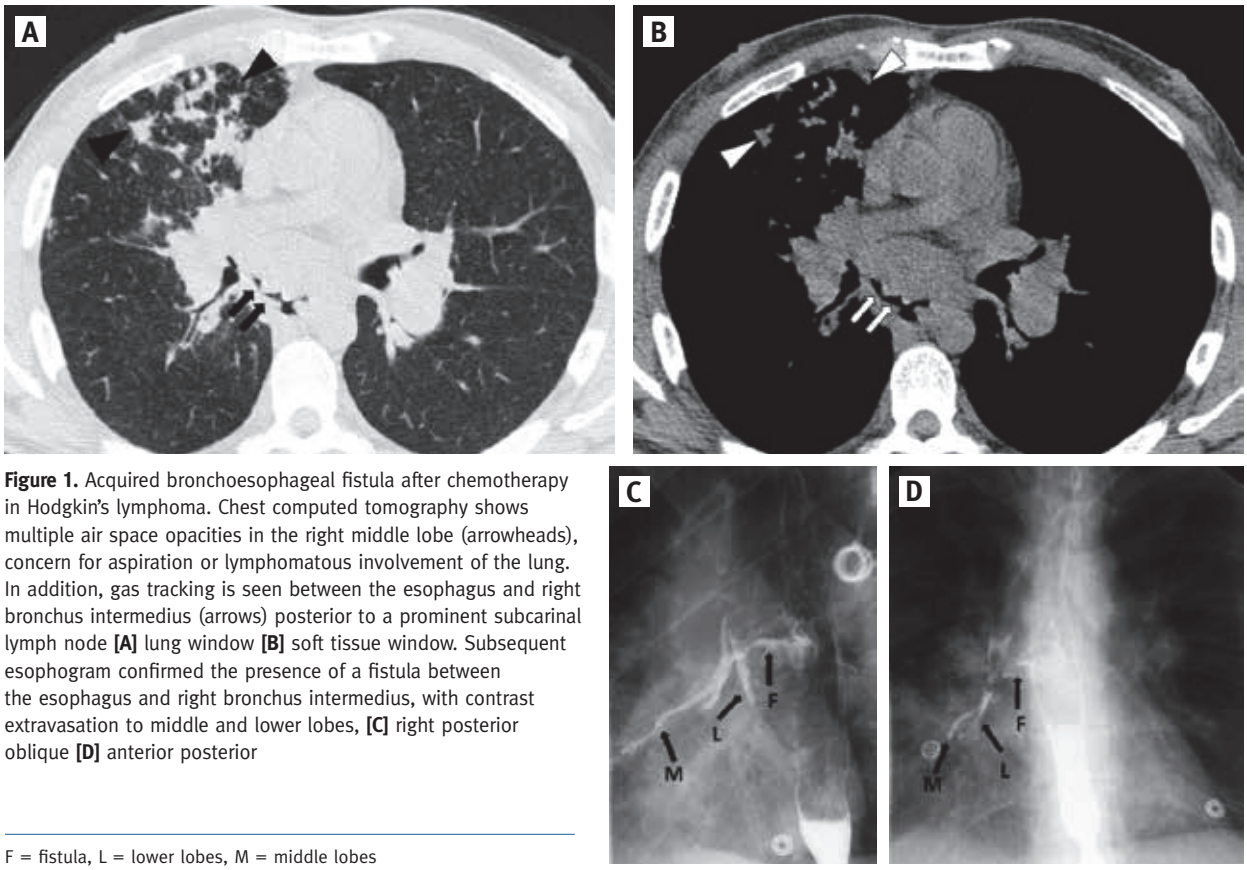

Figure 1. Acquired bronchoesophageal fistula after chemotherapy in Hodgkin's lymphoma. Chest computed tomography shows multiple air space opacities in the right middle lobe (arrowheads), concern for aspiration or lymphomatous involvement of the lung. In addition, gas tracking is seen between the esophagus and right bronchus intermedius (arrows) posterior to a prominent subcarinal lymph node **[A]** lung window **[B]** soft tissue window. Subsequent esophogram confirmed the presence of a fistula between the esophagus and right bronchus intermedius, with contrast extravasation to middle and lower lobes, **[C]** right posterior oblique **[D]** anterior posterior

F = fistula, L = lower lobes, M = middle lobes

esophageal carcinoma and only rarely in lymphoma [1]. The esophagus is involved in 1% of gastrointestinal tract lymphomas [2]. Although 9% of gastrointestinal lymphomas perforate, these occur primarily in the small intestine [3]. Esophageal perforation and fistula formation in the setting of lymphoma is thought to result most frequently from radiotherapy or chemotherapy, but may present spontaneously [1,4,5].

Retrospectively, a chest CT performed 2 months prior to admission revealed minimal gas tracking in the mediastinum, suggesting there was a minor fistula present prior to chemotherapy. Treatment likely widened the fistulous track [6]. A gastrojejunostomy tube was placed to improve nutritional status before proceeding with surgical intervention.

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Capsule

Thirteen is the charm in anaphylaxis

Immunoglobulin E (IgE) is a type of antibody associated with allergies and response to parasites such as worms. When high-affinity, allergen-specific IgE binds its target, it can cross-link receptors on mast cells that induce anaphylaxis. It remains unclear, however, how B cells are instructed to generate high-affinity IgE. **Gowthaman** et al. discovered a subset of T follicular helper cells ($T_{FH}13$) that direct B cells to do just that. $T_{FH}13$ cells are induced by allergens but not during parasite infection. Transgenic mice lacking these cells show impaired production of high-affinity, anaphylactic IgE. $T_{FH}13$ cells, which are elevated in patients with food and aeroallergies, may be targeted in future antianaphylaxis therapies.

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Capsule

Vitamin A as an antimicrobial for skin infections

Vitamin A is an essential fat-soluble micronutrient that regulates immune function through its derivative, retinoic acid. One role of retinoic acid is to control skin infection and inflammation. **Harris** and colleagues reported that dietary vitamin A regulates the expression of the antimicrobial protein RELMα in the skin. RELMα, which is induced by the skin microbiota, can kill bacteria by disrupting their membranes. Mice lacking RELMα have an altered skin microbiota composition and an enhanced susceptibility to certain bacterial infections. The study showed how vitamin A effectively treats skin conditions such as acne and psoriasis.

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Capsule

Halting amyloid-induced dementia

In Alzheimer's disease, amyloid-β accumulation is implicated in the changes in neuronal morphology that underlie cognitive decline. **Henderson** et al. used a transgenic mouse model for familial Alzheimer's disease. Treating these mice with inhibitors of either the Rho-associated kinase ROCK2 or its downstream serine and threonine kinase target LIMK1 prevented the neuronal morphology alterations subsequently caused by amyloid-β accumulation. Thus, these inhibitors, which are in preclinical or clinical trials for cancer patients, may be prophylactic in individuals at high risk for developing Alzheimer's disease.

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