A Curious Case of a Gastropleural Fistula

Sneha Sundar, OMS-III (Michigan State College of Osteopathic Medicine) and Caytlin A. Deering, DO, FACP (Metro Infectious Disease Consultants)

Introduction

A hiatal hernia is the abnormal protrusion of gastric contents through the esophageal hiatus. Patients can experience GERD-like symptoms, intermittent dysphagia, abdominal pain, et.al. While some types of hiatal hernias don't require surgical intervention, type II paraoesophageal hernias, where the gastric fundus herniates through the hiatus, can require surgery. A procedure that can be done is called the Nissen fundoplication can be done, in which the gastric fundus is completely wrapped around the lower esophagus. Some of the common complications of Nissen fundoplication include dysphagia, diarrhea, and flatulence.

Case Presentation

A 73-year-old female with a past medical history of asthma, cardiac ablation, anemia, total hip arthroplasty, and history of hiatal hernia status post repair with Nissen fundoplication, presented for evaluation of sharp left-sided pain and acute shortness of breath. The patient reports following repair of her hernia 3 years ago, she has experienced dysphagia. She had previously been evaluated by surgery and gastroenterology, with negative EGD. She reported a dental cleaning 2 weeks prior, for which she did take amoxicillin preventively. She denied overt aspiration or choking, complications post dental procedure, or recent upper respiratory illness. She also denied fever, chills, or sputum production.

Laboratory workup demonstrated white blood cell count of 29.6 with left shift. Lactate peaked to 3.7 but reduced to 2.2. Creatinine was 2.19. In the Emergency department, she was found to have loculated L sided pleural effusion on CT scan and a chest tube was placed, with greater than 1L of pleural fluid removed.

Pleural fluid gram stain showed moderate yeast, gram negative bacilli, gram positive bacilli, and gram-positive cocci, which raised suspicion that the fluid was originating in the GI tract. Empiric antibiotics with piperacillin-tazobactam and vancomycin were initiated. Antifungal coverage with micafungin was initiated as pt was found to have prolonged QTc, prohibiting fluconazole use.

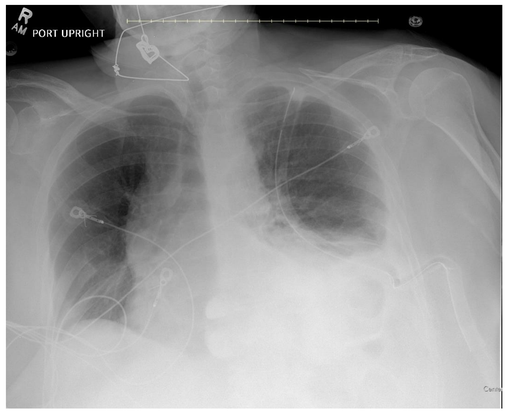
Esophagram was performed and confirmed communication between the proximal gastric fundus with the left pleural space consistent with a gastropleural fistula. Subsequently, the patient underwent surgical repair of her recurrent hiatal hernia with takedown of the gastropleural fistula, resection of necrotic portion of stomach and decortication of the L lung.

Cultures finalized as c. albicans, MSSA, s. salivarius, and lactobacillus. Antimicrobials were streamlined to piperacillin-tazobactam and micafungin for which she completed a 4-week course from date of surgical source control.

The patient demonstrated no recurrence of pleural fluid and was able to tolerate PO intake. After a period of time in the inpatient rehab unit, she was discharged home where she resumed independent living.

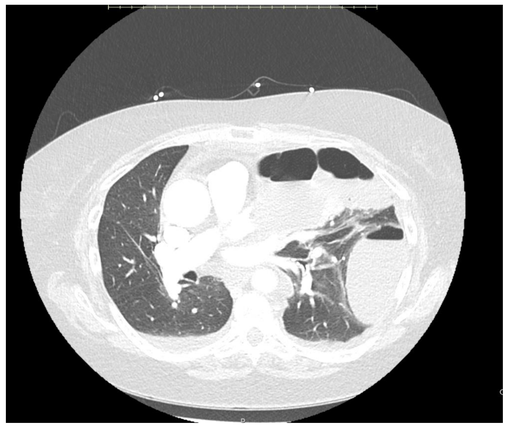
Imaging

CXR 2 days after admission



- Essentially stable exam. Small to moderate partially loculated left-sided pleural effusion with left basilar airspace disease again noted. Left-sided chest tube again noted

CTA chest done on day of admission



- 1. No pulmonary embolus.
  2. Shift of mediastinum to the right with numerous loculated left pleural collections containing gas and fluid concerning for empyema. Areas of consolidation/atelectasis in the left lung. Small right effusion.
  3. Moderate hiatal hernia.

Laboratory Studies

Pleural fluid studies

Glucose 689	pH <6.7
LDH 1,460	Amylase >6,554

Pleural Fluid Cultures

Bacterial Culture: c. albicans, MSSA
Anaerobic Culture: s. salivarius, lactobacillus
Fungal Culture: c. albicans

Discussion

The most common documented cases of gastro-pleural fistulas occur with gastric bypass surgeries and trauma. In the case of this patient, she presents a rare complication of paraoesophageal hiatal hernia repair, a procedure that is performed regularly and normally presents with dysphagia, diarrhea, and flatulence. Most significantly from an Infectious Disease and Internal Medicine standpoint, this patient presented with an extremely atypical presentation of empyema. Empyema are loculations of pus in the pleural space and are typically a resultant of bacterial pneumonia from aspiration, trauma, or pneumonectomy surgery. Some of the alarm signs that indicated this case was an unusual presentation of an empyema were the cultures and amount of fluid removed. Primarily, the organisms that were found ion the culture of the pleural fluid included moderate yeast, gram negative bacilli, gram positive bacilli, and gram-positive cocci, including C. albicans, S. aureus, Lactobacillus species, Streptococcus salivarius.

This case demonstrates all tenets of osteopathic medicine. The patient reported dysphagia for 3 years following her hiatal hernia repair, a complication which typically resolves within a few months. The body was acting in unit with the mind and spirit to communicate further complications. Additionally, the body demonstrated self-regulation and healing by adjusting to the new homeostasis created by the fistula. Finally, regarding structure and function, lung function was compromised because the structure was altered due to the fluid from the fistula. The patient's complaints of shortness of breath and chest pain was resolved once the structure of the lung was restored.

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