Anesthetic Considerations Of Gastro-Bronchial Fistula Repair

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Citation

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Abstract

Gastro-bronchial fistula (GBF) represents an extremely rare complication after surgical procedures. Anesthetic management of such case is challenging to anesthesiologists. We are presenting a case of GBF following gastric bypass surgery for treating morbid obesity. A 25-year-old female patient was admitted in the thoracic surgical floor with cough of gastric contents following Roux-in-Y surgery. Barium meal revealed gastro-bronchial fistulous tract. She underwent left thoracotomy under general anesthesia and the fistula was closed.

Rapid sequence induction of anesthesia and proper isolation of the sound lung are important to minimize incidence of pulmonary aspiration and soiling of the non-operated lung at induction of anesthesia. All precautions of managing one lung ventilation during surgery are to be undertaken. As in any thoracotomy cases we prefer to use thoracic epidural analgesia for intra and postoperative analgesia.

In conclusion, anesthesia for repair of GBF is challenging. To the best of our knowledge this is the first report in literature describing the anesthetic consideration of surgical correction of GBF.

INTRODUCTION

Gastro-bronchial fistula (GBF) represents an extremely rare complication after surgical procedures. Anesthetic management of such case is challenging to anesthesiologists. We are presenting a case of GBF following gastric bypass surgery for treating morbid obesity.

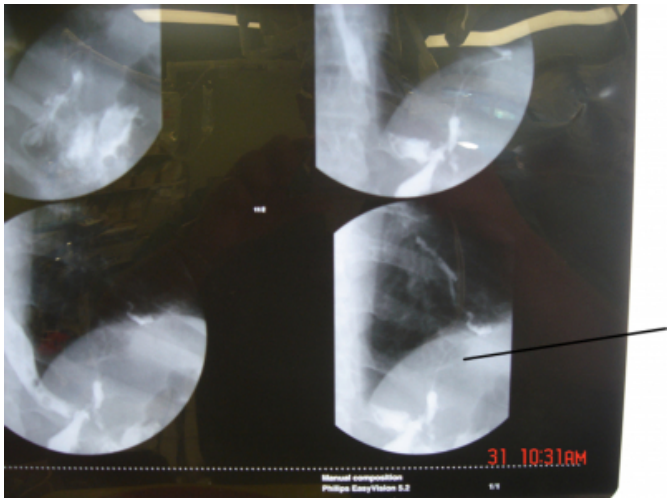
CASE REPORT

A 25-year-old female patient was admitted in the thoracic surgical floor for further investigations and management. She was in her usual state of health until two months back when she underwent in another hospital Roux-en-Y bypass gastrectomy for treatment of morbid obesity. However, three weeks later, she started to develop fever, chest pain and cough. She was investigated and diagnosed to have leak from the anastomotic line. She underwent surgical exploration and the leak was closed. Three days later she started to have severe productive cough and fever. Chest-x-ray and CT scan showed left sided pleural effusion which was drained with needle aspiration. The drainage turned to be an empyema or pus drainage. She started to improve clinically and was discharged with mild fever and left sided chest pain. She was then admitted to our hospital complaining of productive cough mainly every time she eats and drink fluids.

On examination she was clammy, sweaty with low grade fever. Chest examination showed reduced air entry on the left base and bronchial breathing in the mid lateral zone on the left side with dullness on percussion on the left base otherwise good air entry on the right side. Laboratory and biochemical analysis were within normal ranges. Chest-x-ray showed fluid collection in the left base, the right lung was normal. Computerized tomography scan showed thickened parietal pleura in the left side with fluid collection. The upper abdomen showed large spleen with very small fluid collection in the left subphrenic space. Barium swallow showed free fluid in different esophageal parts with peri-anastomotic thin fistulous tract directed into the left lower intrathoracic pleura (Figure 1). The patient was scheduled to undergo left exploratory thoracotomy.

Figure 1

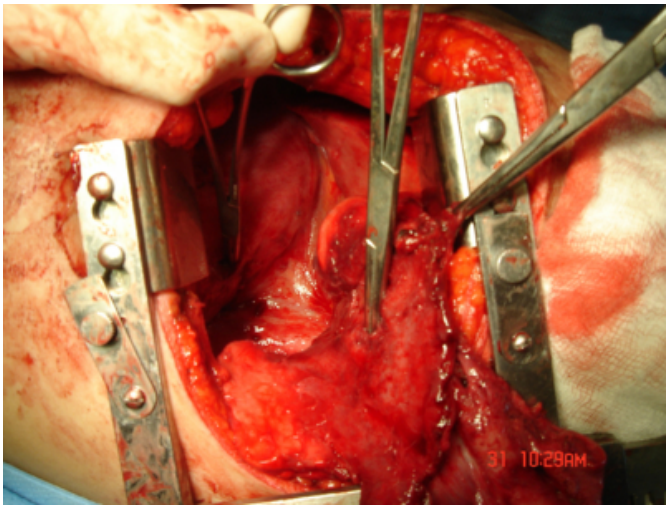
Figure 1: Barium meal shows gastro-bronchial fistula. Arrow is pointing at the fistula.



Preoperative visit revealed 25-year-old female patient, body weight 78kg and height 167cm. All laboratory and biochemical analysis as well as pulmonary function tests were within normal ranges. She was kept fasting night of surgery. Premedication included oral lorazepam 2mg at night and 2mg two hr preoperatively. Also oral ranitidine 150mg was prescribed two hr preoperatively. In the operating room, routine monitoring included, lead II ECG, non-invasive and invasive blood pressure monitoring, tissue oxygen saturation, end tidal CO2 and rectal temperature probe. Peripheral i.v and radial arterial lines were established. Thoracic epidural D5-6 was performed before induction of general anesthesia. After preoxygenation, induction of anesthesia was achieved with sufentanil 10mic and propofol 200mg with cricoid pressure technique. Succinylcholine 100mg was given to facilitate endotracheal intubation. Left sided double lumen tube (DLT) 37Fr was used. Immediately after its insertion the left lung was isolated and the cricoid pressure was released. Fiberoptic bronchoscope was used to verify the correct placement of DLT. Right sided internal jugular vein was cannulated. Anesthesia was maintained with 50% O2 in air and 1MAC sevoflurane. Muscle relaxation was maintained withincremental doses of cis-atracurium. Analgesia was achieved with epidural marcaine 0.5% (7cc bolus). Left exploratory thoracotomy, decortication and resection of fistula tract through the diaphragm with segmentectomy were performed (Figure 2).

Figure 2

Figure 2: Two artery forceps, one in the bronchial fistulous tract and the other in the diaphragm.



The operation lasted for 90min and at the end reversal agents (atropine/neostigmine) in the usual doses were given i.v and the trachea was extubated. The patient was then sent to surgical intensive care unit for further observation.

DISCUSSION

Gastro-bronchial fistula is rare complication following gastric surgery. There are few and sporadic case reports published in the literatures. Most of the reported cases followed esophageal surgery for treating cancer esophagus ([1,2]). Also, benign GBF has been reported following esophagectomy ([3]). Delayed perforation of the stomach following splenectomy leading to GBF although rear, has been reported ([4]). In the literature only one case has been reported following laparoscopic gastric banding for treatment of morbid obesity. A total of 35 cases of GBF have been reported in the literature. The diagnosis of GBF should be suspected when a patient coughs gastric contents, develop recurrent lower respiratory infections or hemoptysis. Investigations include bronchoscopy, barium meal and CT chest to identify lung pathology. Surgical correction remains an option. However, conservative treatment is possible with control of sepsis, adequate drainage and adequate nourishing the patient ([5,6]).

Anesthesia for repair of GBF is challenging to anesthesiologists. In the literature anesthetic considerations for repair of GBF is not reported. The challenges include, dealing with septic patient, repeated lower respiratory tract infection, possible pulmonary aspiration and malnourished patient.

Preoperative preparation of these patients for surgery is important for better outcome. Rapid sequence induction of anesthesia and proper isolation of the sound lung with double lumen tube are important to minimize incidence of pulmonary aspiration and soiling of the non-operated lung at induction of anesthesia. All precautions of managing one lung ventilation during surgery are to be undertaken. As in any thoracotomy cases we prefer to use thoracic epidural analgesia for intra and postoperative analgesia. In conclusion, anesthesia for repair of GBF is challenging. To the best of our knowledge this is the first report in literature describing the anesthetic consideration of surgical correction of GBF.

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