

Case Report

Gastrobronchial fistula post laparoscopic sleeve gastrectomy in immunocompromised patient

Omar Hasheesh Al-Bogami, Abdullah Saeed Al-Zahrani, Bandar Idrees Ali*

Department of Surgery, Prince Sultan Military Medical City, Riyadh, KSA

Received: 05 September 2019

Accepted: 14 November 2019

***Correspondence:**

Dr. Bandar Idrees Ali,

E-mail: biaa1003@yahoo.com

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ABSTRACT

Bariatric surgery is evolving worldwide nowadays. Postoperative complications are mainly represented by gastric leak reported range between 1% to 3.3%. The worse scenario of the leak post laparoscopic sleeve gastrectomy is a fistula. Many types of fistula were prescribed and one of the theses is gastrobronchial one. It has a catastrophic sequela if not diagnosed and treated efficiently early. It is difficult to manage either radiologically, endoscopically or surgically. No clear consensus yet for the standard of treatment for such complication especially if these patients are immunocompromised was the mortality will be very high. Therefore, we aim to contribute our successful approach to treating our patient. We report a case of a 27-year-old female who is obese with systemic lupus erythematosus controlled medically underwent laparoscopic sleeve gastrectomy. 6 months later she presented to the hospital with productive cough post-operative stenting and esophageal dilation was performed. 15 months post LSG patient presented with productive cough with green sputum, food particle, and left-sided chest pain. Endoscopic clip placement was attempted with no avail. The management of gastrobronchial fistulas involves a comprehensive clinical evaluation. In the absence of red flags, initial conservative management should be undertaken. When all else fail, surgery is the only route towards a permanent and definitive treatment. The need for further research and consensus is of utmost importance to guide future surgeons and to increase awareness among the medical community, due to its presentation under the facade of common symptoms.

Keywords: Laparoscopic gastric sleeve, Gastrobronchial fistula, Obesity surgery

INTRODUCTION

Obesity surgery is one of the fast-growing surgeries worldwide, it was calculated that more than 190000 surgery was performed since 2014 worldwide, 46% of that were laparoscopic sleeve gastrectomy.¹ Leaks post laparoscopic sleeve gastrectomy reported ranging from 1% to 3.3%.² And the complication of the leak could evolve in a very serious way resulting in broncho-gastric fistula (BGF).

BGF is a very rare reported complication in the surgical literature post laparoscopic sleeve gastrectomy, but it is

very serious with lethal complication, and as result of that there is yet an agreement on the gold standard management of it. BGF impose a difficult challenge in diagnosis and management as both surgical and conservative management is reported in the surgical literature. Here we report our personal experience and review of the best available evidence in the management of BGF.

CASE REPORT

Our patient is a female 27 years old female, who is a known case of systemic lupus erythematosus and

hypothyroidism. She was taking Cellcept 1 g twice a day, Prednisolone 10 mg once daily, thyroxine 150 mic once daily and hydroxychloroquine 40 mg once daily. She presented to our upper gastric surgery clinic with a complaint of morbid obesity, she did not have any reflux symptoms or respiratory symptoms (sleep apnea), and her BMI was 42 kg/m².



Figure 1: Chest x-ray showing left lower zonal cavity lesion with air fluid level picture highly suggestive of lung abscess.

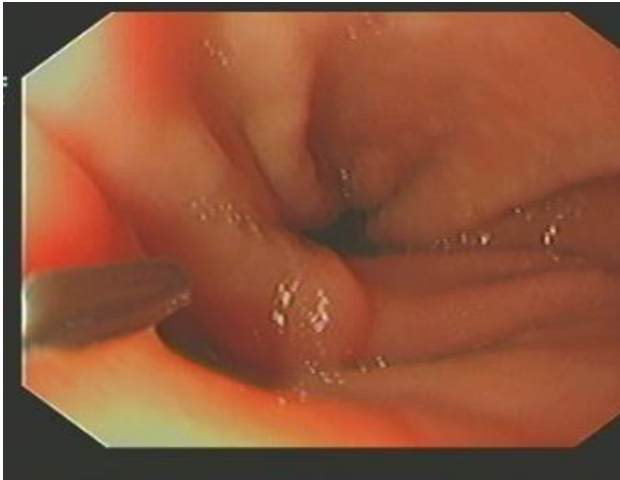


Figure 2: Esophageal leak was found around 38 cm. from incisors; a mega fully covered stent (23 cm) was applied under fluoroscopy.

The patient then was worked up for obesity surgery, where she had an upper GI endoscopy which showed medium size hiatal hernia, then referred to her rheumatologist which cleared her for the surgery with the stopping of Cellept 1 month before the surgery and prednisolone and hydroxychloroquine both stopped 2 weeks before the surgery.

On August 2017 patient was admitted to our surgical ward the day before the surgery, next day patient underwent laparoscopic sleeve gastrectomy which went

uneventful. Day 1 post-op patient was started on clear liquid diet and discharged home on paracetamol 1 g every 6 hours, nexium 40 mg once daily, metoclopramide 10 mg twice daily and clexane 40 mg once daily, she was given clear instruction on post-op oral intake and the need for mobilization, patient received a booklet explaining in details the elements of the required diet she needs to take and patient was upon discharge given a near follow up appointment in the surgical clinic.

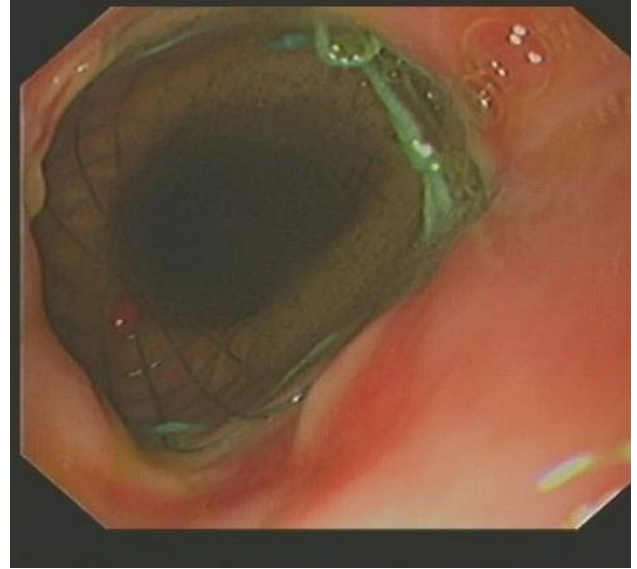


Figure 3: Esophageal stent seen starting from 25 cm from incisor up to the duodenum with no evidence of obstruction, contrast passed easily.

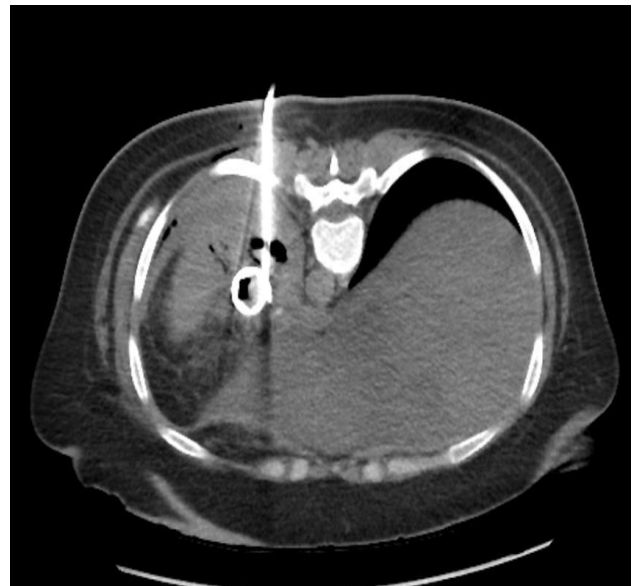


Figure 4: 12 F locking loop catheter in the peri-gastric cavity air cavity via posterior approach for external drainage.

Day 6 post-op patient was seen in the surgical clinic, tolerating the clear liquid diet with no nausea or

vomiting, her diet was advanced at that time to a full liquid diet and given a follow-up OPD after 1 month. One month after the surgery patient was seen in the surgical clinic tolerating oral intake with a weight loss of 7 kg her BMI was 40. She received clear instruction on the diet and given 3 months follow up.



Figure 5: Interval placement of drain with much improvement of the left lower lung cavity.

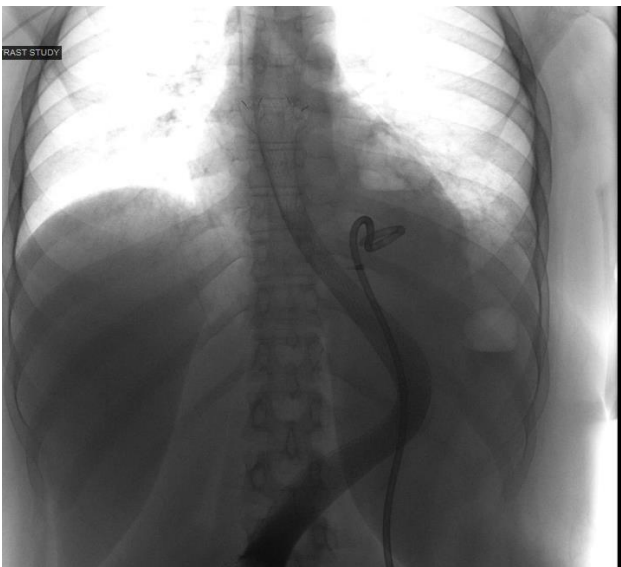


Figure 6: Oral upper gastrograffin study showed the stent in good position with good flow and no evidence of leak.

The patient missed her appointment with the surgical clinic, then 4 months post-op she presented to the emergency department complaining of Shortness of breath for 4 days, it was associated with productive cough

and left-sided pleuritic chest pain. There was no history of fever or DVT.



Figure 7: Complete resolution of the left lung effusion post removal of the stent and pig tail drain.

On Physical examination, her vital signs were Pulse: 100 BP: 114/98 RR: 22 temperature: 37.

She was conscious, awake and oriented to person, place and time.

Cardiovascular examination: showed normal first and second heart sound with no added sounds.

Respiratory examination: showed equal bilateral air entry with crepitation on left lower zone with no wheezes.

Abdomen examination: previous port sites scars of laparoscopic sleeve gastrectomy, with abdomen been soft lax with no areas of tenderness.

On her labs she had: WBC 21 Hgb 11.7 CRP 354 ESR 19 other labs were normal. She had PA chest x-ray which showed left lower lobe infiltration.

The patient was managed initially with resuscitation and started on Intravenous antibiotics, kept NPO on Intravenous fluid. CT chest was done which showed left pleural abscess collection communicating with a peri-gastric fluid collection measuring 4×3 cm. That patient underwent CT guided drainage of the collection through a posterior approach with placement of 12 Fr catheter that drained initially gastric content.

Upper GI fluoroscopy was done which leak around the previous stapler line connecting with the left pleural cavity, so the diagnosis of Broncho gastric fistula was made.

The patient then underwent an upper GI endoscopy which showed gastric leak at around 38 CM from incisors which was managed by mega fully covered stent (23 CM long) with the insertion of the nasojejunal tube, the patient was

started on TPN on the same time. The stent needed readjustment 3 days later. The patient was kept on feeding through NJT, but she could not tolerate so she was kept on TPN.

The patient was discharged 1 month later after starting gradually oral intake and she was tolerating. 2 weeks later patient came to the emergency department complaining of vomiting with epigastric pain, she managed conservatively, keeping her NPO on IVF with a trail of NJT feeding done but patient could tolerate feeding, decision then started TPN feeding.

The mega covered stent was removed 12 weeks later from the first insertion, but a repeated upper GI fluoroscopy study showed persistent Broncho gastric fistula which then managed by an upper GI endoscopy and placement of partially covered metallic stent (HILZO esophageal covered stent, PTFE / partial 22×120 mm), that was kept for 8 weeks then it was removed over a fully covered metallic stent.

Repeated upper GI fluoroscopic study showed no leak. The patient was discharged after 50 days long hospital stay. She was seen after discharge in the clinic, tolerating oral diet, having a BMI of 29. She was followed over 1-year post-discharge doing fine.

DISCUSSION

Broncho gastric fistula (BGF) is one of most serious and challenging complication post laparoscopic sleeve gastrectomy and assessing a patient with a suspicion of BGF, the physician must keep a wide index of suspicion and a thorough understanding of pathophysiology. Initial presentation could offer a clinical challenge especially for non- surgeons as we report in our case, but other reported on the literature different initial presentation, Greilsamer et al reported hemoptysis as initial chief complaint, Fuks et al, reported the first presentation of acute cough with dyspnea, but in larger retrospective study Campos et al, reported in addition to that a first presentation of fever, chest pain and vomiting of pus.⁴⁻⁶ Timing of the first presentation also of the BGF post- surgery is one of the factors that is reported differently in the surgical literature, that could be as early as 1-month post-op but a late presentation (>3 months) is more common, with mean timing of (6.7 months).^{3,5-9}

What is unique about our case report is that we report a patient who is a known case of SLE with CNS involvement taking immune suppressive and steroid medications. Despite the evidence that suggest patients with SLE are more prone to have surgical complications post- operatively, the newly emerging data in the surgical literature suggest a major benefit of obesity surgery with the expected weight loss for patients with SLE, as Corcelles et al have concluded in their retrospective analysis of patients with SLE who underwent obesity surgery in Cleveland clinic, they analyzed 31 patient who

had received different types of anti-obesity intervention, out of that (42%) of patients reported to have reduction in the number of medications used to treat SLE, (32%) experienced reduction in the dose of steroids and (19%) stopped taking any steroid medication, so with that in mind our patient was indicated to have the benefit from the weight loss postoperatively.^{10,11}

The anatomical location of the Broncho gastric fistula may differ from one patient to another, but the most common location is Angle of HIS, but other locations are also reported like in the gastric body.⁴⁻⁶

Once the diagnosis of Broncho gastric fistula is made, the management has evolved in the surgical literature but still controversial, keeping the patients NPO, starting them on TPN, percutaneous drainage of the pulmonary collection with starting them a wide spectrum of anti-biotics are reported initial management.³ But Tabbara and colleges reported the failure of conservative endoscopic management with their patient underwent total gastrectomy, others reported more aggressive surgical management as Greilsamer and colleges did left lower lobectomy with total gastrectomy with Roux-en-Y esophagojejunostomy.⁴ The period of conservative management and number of trails that was offered for patients with BGF also differed from one paper to another, as Fuks et al reported 8 months of conservative management that consisted of 3 different trails of endoscopic management with covered stent but they reported failure of the conservative management with recurrence of pulmonary infections, patient underwent total gastrectomy with left lower lobectomy and reconstruction of left diaphragm.⁵

The number of papers reporting successful conservative management is increasing in the surgical literature, Abraham and colleges reported endoscopic management of BGF with self-expanding plastic stent and ablation of the fistula tract with no method mentioned and for how long patient was followed up, Al Harbi et al, in the other hand reported endoscopic management with a covered stent, also did Al Lehibi et al, with reporting of 1 year follow up showing no recurrence.⁷⁻⁹ In the 15 patients that were enrolled in the retrospective study done by Campos et al, the endoscopic management of BGF had 2 main principles: correction of the distal gastric stricture and the internal opening of gastric fistula, and of the patients enrolled in the study (5) had laparoscopic sleeve gastrectomy, out that of them (4) patients had in addition to the BGF a narrowing at the level of incisura angularis and one patient had the narrowing at the level of the ring, they reported endoscopic dilation of the narrowing by 30 mm pneumatic dilator, endoscopic internal drainage of pulmonary collection and placement of self-expanding plastic stent if required, in their results (14 of 15) had benefited from the endoscopic management without going for more aggressive management and of that 7 patients had management with stenting which resulted in faster mean time recovery from the BGF (2.5 months in compare to 9.5 months).⁶

We recommend that patients who is known case of systemic disease (like SLE in our case) who undergoes anti-obesity surgery should be followed life long, and inpatient who develop BGF post laparoscopic sleeve gastrectomy conservative management could be a reasonable option that could offered to the patient despite the prolonged period of time in the light of the current evidence.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Al-Bogami OH, Al-Zahrani AS, Ali BI. Gastrobronchial fistula post laparoscopic sleeve gastrectomy in immunocompromised patient. *Int Surg J* 2019;6:4530-4.