

Gastro-colic fistula as rare complication of laproscopic sleeve gastrectomy

Gari MKM, Foula MS, Eldamati A, Alramadhan M, Alrashed L, Almakinah SH

Abstract—Gastro colic fistula is a rare reported complication of LSG caused mainly by persist leak. . The clinical presentation of this rare entity is not specific ,high index of suspicion is needed in detection of this life threatening complication . diarrhea was a common feature, nausea and vomiting could exist and the patients may rarely present with syncopal attacks. Trelles et al reported a case of gastrocolic fistula .it repaired laparoscopically after failure initial management by PCD & Endoluminal stent . it repaired laparoscopically .Bhasker et al. (8) reported a case of gastrocolic fistula at level of GEJ. This case was managed by Fistulectomy and re-sleeve gastrectomy .D.Nguyen et al, reported another case of gastrocolic fistula after (LGS) it managed by EJO (Roux en Y) and subtotal colectomy .F. Garofalo et al. reported a case of gastrocolic fistula.It was managed by Fistulectomy with omental interposition and intra op endoscopy.

Index Terms— fistula, gastrocolic, laproscopic, post operative leak ,re-sleeve gastrectomy ,sleeve gastrectomy complication, sleeve gastrectomy.

1 INTRODUCTION

Bariatric surgery evolved dramatically as response for global obesity. Obesity is not only weight gain but it is a syndrome with major consequences and complications.

Laparoscopic sleeve gastrectomy is a popular surgical modality for obesity management. Despite the innocent look of the procedure, it might be accompanied by many serious complications. Post sleeve leak is the corner stone for most of its related morbidity and mortality.

Patients with postoperative leak present differently. Usually, they present very early after procedure. In other cases, leak occurred several weeks postoperative. High index of suspicion is crucial for diagnosis.

Here, we report a rare case of gastro-colic fistula as a consequence of leak after laparoscopic re-sleeve gastrectomy.

case presentation

A 32 year-old male patient underwent laparoscopic re-sleeve gastrectomy for morbid obesity at another hospital six weeks prior to current presentation. He presented to ER of King Fahad University Hospital complaining of two days history of recurrent moderate amount of coffee ground vomiting, multiple attacks of melena, inability to tolerate food, generalized abdominal pain mainly epigastric, generalized body ache and fatigue.

He was medically free. He underwent an uneventful laparoscopic sleeve gastrectomy 3 years back as his BMI was 42 Kg/m(136 kg, 180 cm). He lost 32 kg (53% of excess body weight) over 2 years. He regained 15 kg after that. His BMI reached 36.7 Kg/m. A decision was made in another hospital to do laparoscopic re-sleeve gastrectomy. He was discharged in a stable condition on second day postoperative. After presentation to our ER, he was admitted under gastroenterology service as a case of upper GI bleeding. Surgical Consultation was done after 5 days of admission. On physical examination, patient was ill looking, disoriented, tachycardic (110/m). His temperature was 39.5 °. Blood pressure was maintained. Abdominal examination showed rigidity all over, epigastric tenderness, with no bowel sounds.

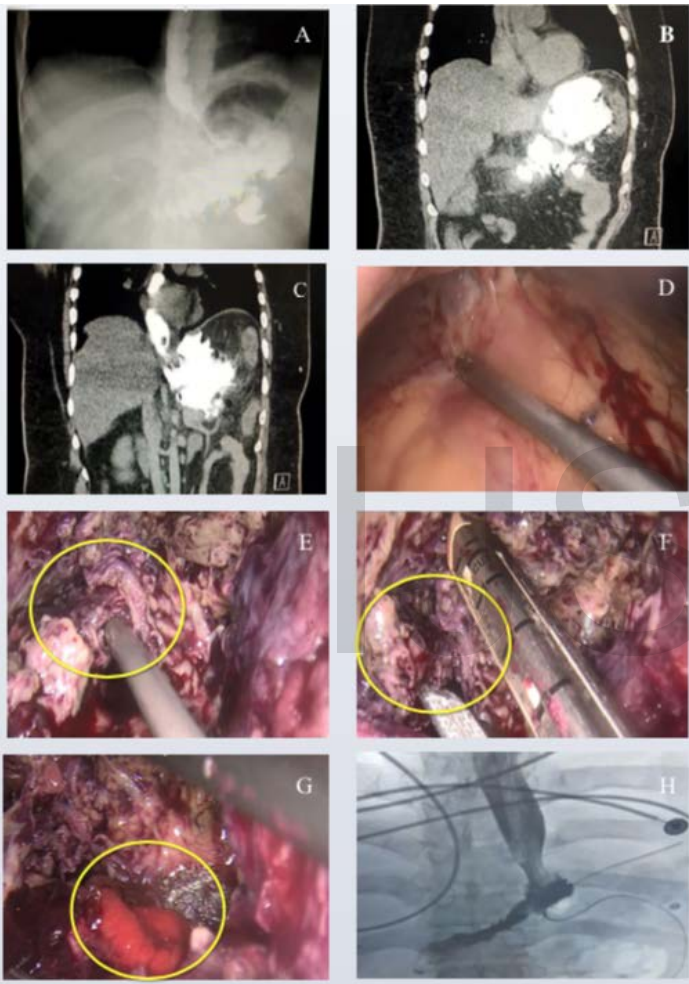
Lab investigations showed leukocytosis with neutrophilia, hypernatremia. CT abdomen with IV contrast and oral gastrograffin confirmed post sleeve gastrectomy leak. He was diagnosed as septic shock secondary to leakage post sleeve gastrectomy with Wernicke encephalopathy.

Resuscitation and empirical antibiotics were started. Ultrasound guided percutaneous drainage was attempted but failed due to close proximity of the transverse colon to the abscess cavity. The patient was shifted to OR for emergency diagnostic laparoscopy. After general anesthesia and endotracheal intubation, the patient was put in supine position at 30 degree anti Trendelenburg with abducted legs. Examination was done and revealed epigastric fullness. Creation of pneumoperitoneum using Veress needle in Palmer's point. First trocar was inserted under vision 20cm below xiphisternum, 2 cm left to midline. The 2nd and 3rd trocars were inserted at mid-clavicular line 15cm below costal margin left and right respectively. Diagnostic laparoscopy was done. There was no free fluid collection in the abdomen. The greater omentum and transverse colon were walling off a huge abscess cavity with failure of identification of the liver edge and the sleeved stomach. Careful dissection with suction and irrigation tip revealed gush of pus and foul, dark fecal material and altered blood come out from abscess cavity. Meticulous dissection was done aiming to reach the GEJ and upper part of sleeved stomach. A long leak was identified with eversion of gastric mucosa just distal to GEJ, most likely due to stapler failure. Dissection of distal part of the sleeve was difficult due to intense adhesion. Dissection of a tubular structure connecting the upper part of the stomach and the colon was done carefully, which turned to be a gastro-colic fistula. It was controlled by endoscopic linear stapler. A tube was inserted around the area of leak to drain the disrupted suture line. Two drains were inserted in the sub-phrenic and pelvis to drain any remaining collection. Feeding jejunostomy was created laparoscopically 60 cm distal to duodeno-jejunal junction.

The patient tolerated the procedure well. He was kept under total parenteral nutrition followed by jejunostomy feeding. He was

covered by empirical antibiotics and antifungal according to the infectious diseases team, which changed according to fluid culture results. Other medications included proton pump inhibitor, analgesia and anticoagulants.

After 6 weeks of primary life-saving procedure, a definitive open esophago- jejunostomy with total gastrectomy was done successfully after difficult attempt of laparoscopic intervention. Gastrograffin contrast study confirmed the continuity of the bowel with no residual leak. The patient was discharged home in a stable condition. He is following regularly in outpatient clinic.



A: Water soluble study showing leaking of contrast outside the stomach. B, C: CT abdomen with IV and oral contrast confirming presence of leakage with complete collapse of the stomach. D: Huge abscess wall formed by liver, transverse colon and omentum. E, F: Tubular structure connecting sleeved stomach with transverse colon; gastro-colic fistula. G: Site of leak, 4 cm, near the angle of His, with eversion of gastric mucosa. H: water soluble study after oesophagojejunostomy; the definitive procedure.

Discussion

Gastro-colic fistula is a rare reported complication of sleeve gastrectomy. It results from persistent intra-abdominal infection post leak.

Other causes of gastro-colic fistula are malignant tumors of stomach or colon, crohn's disease, peptic ulcer disease, pancreatitis, diverticulitis, trauma and severe intra-abdominal abscess.

Management consists of resuscitation, stabilization of the patient with drainage of any co-existing intra-abdominal abscess along with treatment of malnutrition status followed by definitive procedure. Intra-abdominal abscess drainage could be image guided, laparoscopic, open or rarely trans gastric. Endo luminal management including stent and over the scope clip might help. The definitive surgical management entails excision of fistula with or without omental interposition between residual stomach and colon. Rarely re-sleeve gastrectomy and or colectomy could be done.

References

1. Pentin, P. L., & Nashelsky, J. (2005). What are the indications for bariatric surgery? *Journal of Family Practice*, **54**(7), 633–634.
2. Trelles N, Gagner M, Palermo M, Pomp A, Dakin G, Parikh M. Gastrocolic fistula after re-sleeve gastrectomy: outcomes after esophageal stent implantation. *Surg Obes Relat Dis* 2010;6(3):308–12.
3. Parikh M, Issa R, McCrillis A, Saunders JK, Ude-Welcome A, Gagner M. Surgical strategies that may decrease leak after laparoscopic sleeve gastrectomy: a systematic review and meta-analysis of 9991 cases. *Ann Surg* 2013;257(2):231–7.
4. Nguyen D, Dip F, Hendricks L et al. The surgical management of complex fistulas after sleeve gastrectomy. *Obes Surg* 2016; **26**: 245-250
5. Foletto M, Prevedello L, Bernante P, et al. Sleeve gastrectomy as revisional procedure for failed gastric banding or gastroplasty. *Surg Obes Relat Dis* 2010;6(2):146–51.
6. Rosenthal RJ *et al.* International Sleeve Gastrectomy Expert Panel Consensus Statement: Best practice guidelines based on experience of >12,000 cases. *Surg Obes Relat Dis* 2012; **8**: 8–19.
7. Burgos AM, Braghetto I, Csendes A, et al. Gastric leak after laparoscopic-sleeve gastrectomy for obesity. *Obes Surg*. 2009;19(12):1672–7
8. Bhasker AG, Khalifa H, Sood A, Lakdawala M. Management of gastro-colic fistula after laparoscopic sleeve gastrectomy. *Asian J Endosc Surg* 2014;7(4):314–6.
9. Buyukberber M, Gulsen M, Sevinc A *et al.* Gastrocolic fistula secondary to gastric diffuse large B-cell lymphoma in a patient with pulmonary tuberculosis. *J Natl Med Assoc* 2009; **101**: 81–83.
10. Marschall J, Bigsby R, Nechala R. Gastrocolic fistulae as a consequence of benign gastric ulcer disease. *Can J Gastroenterol* 2003; **17**: 441–443.
11. Aydin U, Yazici P, Ozutemiz O *et al.* Outcomes in the management of gastrocolic fistulas; a single unit's experience. *Turk J Gastroenterol* 2008; **19**: 152–157.
12. Garofalo, Fabio, Henri Atlas, and Radu Pescarus. "Laparoscopic treatment of gastrocolic fistula: a rare complication post-sleeve gastrectomy." *Surgery for Obesity and Related Diseases* 12.9 (2016): 1761-1763.

1. C. J. Kaufman, Rocky Mountain Research Laboratories, Boulder, Colo., personal communication, 1992. (Personal communication)
2. D.S. Coming and O.G. Staadt, "Velocity-Aligned Discrete Oriented Polytopes for Dynamic Collision Detection," *IEEE Trans. Visualization and Computer Graphics*, vol.14, no.1, pp. 1-12, Jan/Feb 2008, doi:10.1109/TVCG.2007.70405. (IEEE Transactions)
3. S.P. Bingulac, "On the Compatibility of Adaptive Controllers," *Proc. Fourth Ann. Allerton Conf. Circuits and Systems Theory*, pp. 8-16, 1994. (Conference proceedings)
4. H. Goto, Y. Hasegawa, and M. Tanaka, "Efficient Scheduling Focusing on the Duality of MPL Representation," *Proc. IEEE Symp. Computational Intelligence in Scheduling (SCIS '07)*, pp. 57-64, Apr. 2007, doi:10.1109/SCIS.2007.367670. (Conference proceedings)
5. J. Williams, "Narrow-Band Analyzer," PhD dissertation, Dept. of Electrical Eng., Harvard Univ., Cambridge, Mass., 1993. (Thesis or dissertation)
6. E.E. Reber, R.L. Michell, and C.J. Carter, "Oxygen Absorption in the Earth's Atmosphere," Technical Report TR-0200 (420-46)-3, Aerospace Corp., Los Angeles, Calif., Nov. 1988. (Technical report with report number)
7. L. Hubert and P. Arabie, "Comparing Partitions," *J. Classification*, vol. 2, no. 4, pp. 193-218, Apr. 1985. (Journal or magazine citation)
8. R.J. Vidmar, "On the Use of Atmospheric Plasmas as Electromagnetic Reflectors," *IEEE Trans. Plasma Science*, vol. 21, no. 3, pp. 876-880, available at <http://www.halcyon.com/pub/journals/21ps03-vidmar>, Aug. 1992. (URL for Transaction, journal, or magazine)
9. J.M.P. Martinez, R.B. Llavori, M.J.A. Cabo, and T.B. Pedersen, "Integrating Data Warehouses with Web Data: A Survey," *IEEE Trans. Knowledge and Data Eng.*, preprint, 21 Dec. 2007, doi:10.1109/TKDE.2007.190746.(PrePrint)

IJSER