

Surgeon at work

Laparoscopic management of gastric leak secondary to distal staple line disunion after sleeve gastrectomy

Lionel Rebibo, M.D.^a, Abdennaceur Dhahri, M.D.^a, Jean-Marc Regimbeau, M.D., Ph.D.^{a,b,c,*}^aDepartment of Digestive Surgery, Amiens University Hospital, Avenue René Laennec, F-80054 Amiens cedex 01, France^bEA4294, Jules Verne University of Picardie, F-80054 Amiens, France^cClinical Research Center, Amiens University Hospital, Avenue René Laennec, F-80054 Amiens cedex 01, France

Received March 21, 2015; accepted March 30, 2015

Keywords: Sleeve gastrectomy; Gastric leak; Material defect; Laparoscopy

Laparoscopic sleeve gastrectomy (SG) has become very popular [1] due to its apparent technical ease, positive results (in terms of weight loss and improvement of comorbidities [2]), and low postoperative complication rates. Major complications are gastric leak (GL) and hemorrhage along the gastric staple line. GL is found in less than 3% of cases [3] and mostly occurs between postoperative day 5 and 8 [4].

Operating procedure

We report here a case of a 45-year-old man who underwent SG and was referred to our institution for suspicion of GL 2 days after performing SG. An abdominal computed tomography (CT) scan with oral contrast study showed distal GL with extravasation of contrast product in the peritoneal cavity.

An immediate laparoscopy using a 4-trocar technique [5] was performed (Video). After retracting the left liver lobe, exploration found intra-peritoneal gastric fluid secondary to the distal staple line disunion. The gastric remnant was removed laparoscopically, which allowed the distal disunion to be stapled without tension. Then, an intraoperative methylene blue test showed the absence of GL. After checking there was no leakage in the gastric staple line, 2 suctions drains were placed along the gastric resection line,

and a feeding jejunostomy was performed using short mid-line laparotomy, as is usually performed in our institution in case of early-onset GL [6].

The surgery was well-tolerated, and an abdominal CT scan with oral contrast study performed 6 days post-operation show an absence of GL. Abdominal drains were removed on the eighth and ninth postoperative days. Outcomes were uneventful, and the patient was discharged from the hospital at day 10. At 3 months follow-up, there were no signs of recurrence of GL.

Discussion

The occurrence of postoperative GL is a difficult, life-threatening complication to manage and is associated with a mortality rate of between 0% and 9% [7–9]. Most of GL occurs on the upper third of the gastric staple line. There are many hypotheses for the appearance of GL, such as ischemic causes due to an aggressive dissection of the posterior surface of the fundus [10], increased intraluminal pressure [9], and staple misfiring [11].

In the case of distal GL, the cause is usually a technical error or a material defect. In our video, the gastric sleeve tube was not loose enough given the presence of posterior adhesions. Stapling could be more difficult as a result of increased tension on the gastric stapling line. Also, stapling was started more than 6 cm above the pylorus. For this reason, we chose to perform a new stapling of the distal gastric tube after mobilizing the gastric sleeve tube (partially with respect to its posterior surface and the great

*Correspondence: Jean-Marc Regimbeau, M.D., Ph.D., Service de chirurgie digestive, CHU d'Amiens, Avenue René Laennec, F-80054 Amiens cedex 01, France.

E-mail: regimbeau.jean-marc@chu-amiens.fr

omentum), taking care to remove the staple line disunion. Such a procedure was technically possible because the initial SG was not performed in an optimal way.

Conclusion

Laparoscopic management of a GL secondary to a distal staple line disunion after sleeve gastrectomy can be performed safely with positive outcomes. The important point is to adapt to the intraoperative conditions.

Conflict of interest

None of the authors have any conflicts of interest to declare.

Appendix

Supplementary data

Supplementary data associated with this article can be found in the online version at <http://dx.doi.org/10.1016/j.soard.2015.03.022>.

References

- [1] Fuks D, Verhaeghe P, Brehant O, et al. Results of laparoscopic sleeve gastrectomy: a prospective study in 135 patients with morbid obesity. *Surgery* 2009;145(1):106–13.
- [2] Silecchia G, Boru C, Pecchia A, et al. Effectiveness of laparoscopic sleeve gastrectomy (first stage of biliopancreatic diversion with duodenal switch) on co-morbidities in super-obese high-risk patients. *Obes Surg* 2006;16(9):1138–44.
- [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] Nocca D, Krawczykowsky D, Bomans B, et al. A prospective multicenter study of 163 sleeve gastrectomies: results at 1 and 2 years. *Obes Surg* 2008;18(5):560–5.
- [5] Dhahri A, Verhaeghe P, Hajji H, et al. Sleeve gastrectomy: technique and results. *J Visc Surg* 2010;147(Suppl 5):e39–46.
- [6] Rebibo L, Dhahri A, Verhaeghe P, Regimbeau JM. Early gastric fistula after laparoscopic sleeve gastrectomy: surgical management. *J Visc Surg* 2012;149(5):e319–24.
- [7] Sakran N, Goitein D, Raziel A, et al. GLs after sleeve gastrectomy: a multicenter experience with 2,834 patients. *Surg Endosc* 2013;27(1):240–5.
- [8] Moszkowicz D, Arienzo R, Khettab I, et al. Sleeve gastrectomy severe complications: is it always a reasonable surgical option? *Obes Surg* 2013;23(5):676–86.
- [9] Csendes A, Braghetto I, León P, et al. Management of leaks after laparoscopic sleeve gastrectomy in patients with obesity. *J Gastrointest Surg* 2010;14(9):1343–8.
- [10] Perez M, Brunaud L, Kedaifa S, et al. Does anatomy explain the origin of a leak after sleeve gastrectomy? *Obes Surg* 2014;24(10):1717–23.
- [11] Baker RS, Foote J, Kemmeter P, Brady R, Vroegop T, Serveld M. The science of stapling and leaks. *Obes Surg* 2004;14(10):1290–8.