FOREGUT STENT MIGRATION RESULTING IN BOWEL OBSTRUCTION AND PERFORATION. A REPORT OF TWO CASES AND REVIEW OF THE LITERATURE

Andy Sohn[1], Lauren Dobrie[1], Jan M Krzak[2], John Weisman[1], Piotr Gorecki[1]
[1]NYP Brooklyn Methodist, Brooklyn, New York; [2]South Jutland Hospital, Aabenraa, Denmark

NYP Brooklyn Methodist Hospital, Brooklyn, NY

Introduction

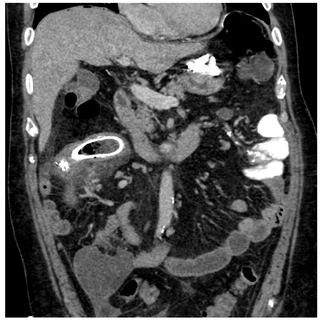
Covered endo-luminal stents are increasingly popular mode of treatment of anastomotic leaks in bariatric and foregut surgery. However, their propensity for migration is well reported and multiple fixation mechanisms have been suggested. Overall benefits of their utilization need to be balanced against their potential for migration and other related complications. We present two rare cases of stent migration requiring small bowel resection.

Case #1

A 61-year-old male, PMHx of DM, MDD, HLD, PSx of Laparoscopic cholecystectomy, who failed vertical banding gastroplasty (1989) underwent laparoscopic revision to Roux-en-Y (2021) complicated by anastomotic leak. Upper endoscopy with 18mmx12cm Niti-S fully covered esophageal stent placement and fixation with an over-the-scope clip (Ovesco Stentfix) was performed. This was followed by repositioning the next day with placement of a second overlapping 20mmx12cm Niti-S fully covered stent with suture fixation with the OverStitch device and injection of fibrin glue. Follow up imaging showed stent migration to the distal ileum. Prior to elective removal the patient developed peritonitis and pneumoperitoneum and was then taken for emergent diagnostic laparoscopy with small bowel resection and primary anastomosis. The patient tolerated the procedure well and was discharged six day later with full recovery. Postop 1.5 years with from 297lb to 214lb and DM has resolved.

Case #2

A 58-year-old female, heavy smoker with history of hemiparesis and recent traumatic fracture of the patella on nonsteroidal analgesics (NSAIDS) for pain management presented with epigastric pain and peritonitis requiring emergent operative intervention.





Case 1: CT scan of abdomen and pelvis showing distal stent migration, and stent.





Case 2: CT scan of abdomen and pelvis showing distal stent migration, and stent.

Laparoscopy with suture of the perforated duodenal ulcer and subsequent worsening sepsis and reoperation with laparotomy, tube duodenostomy and drainage was performed. Subsequently accidental dislodgement of the duodenostomy tube five days later prompted endoscopic intervention and Niti-S Pyloric / Duodenal Covered Stent 10 cm 22 mm was deployed in pylorus and duodenum. Following clinical recovery and discharge, patient was readmitted five weeks later with obstructive symptoms requiring laparotomy and segmental resection of mid small bowel and stent extraction. Following uncomplicated recovery, the patient was discharged 6 days later.

Conclusion

Natural propensity of stent migration that is augmented by the intestinal peristalsis remains a considerable limitation of wider application of covered stents. Distal stent migration resulting in perforation or obstruction are possible sequala of this phenomenon. Future applications should involve improved stent design and geometry as well as more durable fixation methods to minimize possibility of this untoward occurrence. More studies are needed to evaluate overall benefit and clinical value of covered intraluminal stents in the management of foregut surgery gastrointestinal leaks. Radiograms and endoscopic images will be presented.

Reference

Saranga Bharathi R, Rao P, Ghosh K. Iatrogenic duodenal perforations caused by endoscopic biliary stenting and stent migration: an update. Endoscopy. 2006 Dec;38(12):1271-4. doi: 10.1055/s-2006-944960. PMID: 17163332.

Ngamruengphong S, Sharaiha RZ, Sethi A, Siddiqui AA, DiMaio CJ, Gonzalez S, Im J, Rogart JN, Jagroop S, Widmer J, Hasan RA, Laique S, Gonda T, Poneros J, Desai A, Tyberg A, Kumbhari V, El Zein M, Abdelgelil A, Besharati S, Hernaez R, Okolo PI, Singh V, Kalloo AN, Kahaleh M, Khashab MA. Endoscopic suturing for the prevention of stent migration in benign upper gastrointestinal conditions: a comparative multicenter study. Endoscopy. 2016 Sep;48(9):802-8. doi: 10.1055/s-0042-108567. Epub 2016 Jun 29. Erratum in: Endoscopy. 2016 Sep;48(9):808. PMID: 27356125.

Yimcharoen P, Heneghan HM, Tariq N, Brethauer SA, Kroh M, Chand B. Endoscopic stent management of leaks and anastomotic strictures after foregut surgery. Surg Obes Relat Dis. 2011 Sep-Oct;7(5):628-36. doi: 10.1016/j.soard.2011.03.017. Epub 2011 May 25. PMID: 21798816.

Martínez Hernández A, Beltrán Herrera H, Martínez García V, Ibáñez Belenguer M, Queralt Martín R, Maiocchi Segredo AK, Aliaga Hilario E, Laguna Sastre JM. Stent Management of Leaks After Bariatric Surgery: a Systematic Review and Meta-analysis. Obes Surg. 2022 Apr;32(4):1034-1048. doi: 10.1007/s11695-022-05890-8. Epub 2022 Feb 7. PMID: 35132569.