Postoperative Stomach Volvulus and Pancreatitis Following a Sleeve Gastrectomy

Shane B. Devine BS, Sam J. King BS, Bradley J. Chatterton BS, & Kurt D. Knepley DO

Introduction

- Laparoscopic vertical sleeve gastrectomy is the most common bariatric procedure performed globally
- The greater curvature and fundus of the stomach are stapled off and removed, forming a narrower and less distensible stomach
- Postoperative complications: gastroesophageal reflux disease, leakage of the staple line, intraluminal and intra-abdominal bleeding, porto-mesenteric vein thrombosis and gastric obstruction
- Mechanism of obstruction: mechanical narrowing or malrotation of the sleeve caused by improper alignment of the staples
- We present a patient with gastric outlet obstruction missed on imaging and acute pancreatitis that was initially misdiagnosed as dumping syndrome

Case Presentation

- 24-year-old female with PMHx of asthma presented with persistent abdominal pain, nausea and vomiting two weeks after sleeve gastrectomy in Mexico
- Vitals were stable. Labs were remarkable for elevated lipase
- CT Abdomen and Pelvis with and without contrast revealed post-surgical changes associated with sleeve gastrectomy without evidence of complications
- Diagnosed with dumping syndrome and pancreatitis: managed supportively but her symptoms did not improve
- Endoscopy revealed malrotation of the gastric sleeve not seen on initial imaging
- She required TPN for nutritional support and was discharged with plans for outpatient surgery, but returned to the hospital where she was transferred for Roux en Y bypass. However, malrotation was instead managed with laparoscopic strictureplasty followed two months later by endoscopic dilation and botulinum toxin injection

Discussion

- This case presents the complication of sleeve torsion with subsequent gastric outlet obstruction as a diagnosis to consider in a patient with postoperative nausea, vomiting and abdominal pain
- Initial imaging should include CT scan with contrast, followed by endoscopy if negative. An oral glucose tolerance test can be performed to diagnose dumping syndrome if endoscopy is negative
- The pancreas is evaluated by imaging and lipase levels. A prophylactic cholecystectomy during the sleeve gastrectomy can be considered to reduce the risk of postoperative gallstone pancreatitis.[8]
- Postoperative pancreatitis can also be caused by gastric outlet obstruction. Gastropexy has been shown to reduce gastric sleeve torsion and secondary obstruction.[9]
- Management of gastric outlet obstruction includes supportive care, balloon dilation if a focus of stenosis is identified, or gastric bypass if symptoms persist.[1]

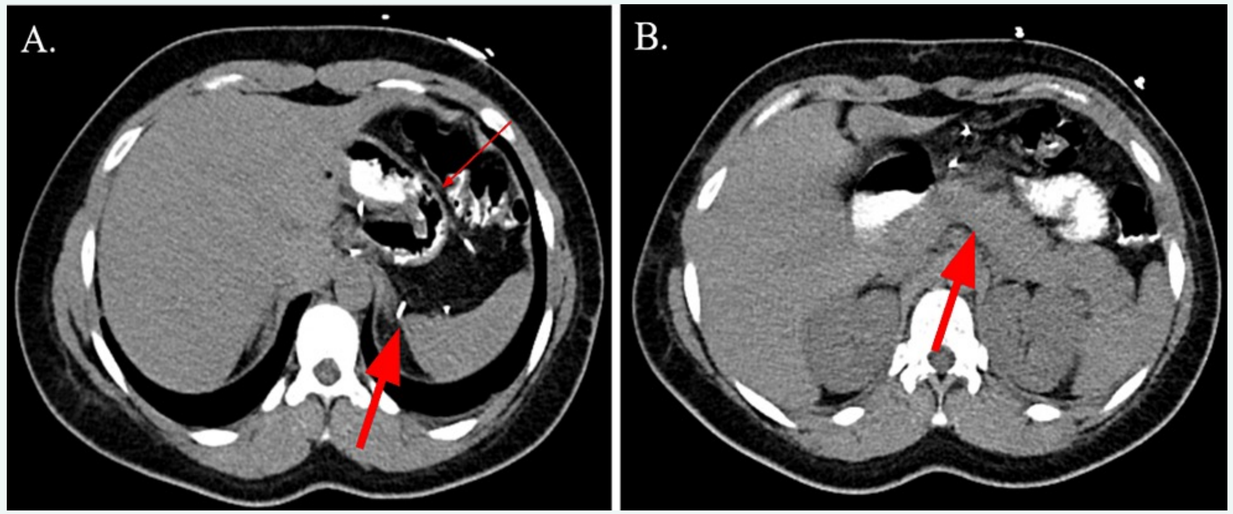

Figure 1: CT Abdomen Pelvis with Oral Contrast Only
A.) Axial view of the abdomen demonstrating several surgical clips (thick arrow) and post-surgical changes (thin arrow) associated with sleeve gastrectomy
B.) Axial view of the abdomen at level of the pancreas (thick arrow). No bowel obstruction or signs of acute inflammation

Conclusion

- In a patient with negative initial imaging, but persistent postoperative abdominal pain, nausea and vomiting following a sleeve gastrectomy, the diagnosis of sleeve volvulus should be considered

References

1. Luo L, Li H, Wu Y, et al.: Portal venous system thrombosis after bariatric surgery: A systematic review and meta-analysis. In Surgery (United States). Volume 170. Mosby Inc. 2021, 363-372. 10.1016/j.surg.2021.03.005
2. Chung AY, Thompson R, Overby DW, Duke MC, Farrell TM: Sleeve Gastrectomy: Surgical Tips. Journal of Laparoendoscopic and Advanced Surgical Techniques. 2018, 28:930-937. 10.1089/lap.2018.0392
3. Eisenberg D, Shikora SA, Aarts E, et al.: 2022 American Society for Metabolic and Bariatric Surgery (ASMBS) and International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO): Indications for Metabolic and Bariatric Surgery. Surgery for Obesity and Related Diseases. 2022, 18:1345-1356. 10.1016/j.soard.2022.08.013
4. Stahl Jonathan M SM: "Obesity Surgery Indications and Contraindications.". PubMed StatPearls Publishing. 2020.
5. Yeung KTD, Penney N, Ashrafian L, Darzi A, Ashrafian H: Does sleeve gastrectomy expose the distal esophagus to severe reflux?: A systematic review and meta-analysis. In. Annals of Surgery. 271-2020. 10.1097/sla.0000000000003275
6. Gagner M, Buchwald JN: Comparison of laparoscopic sleeve gastrectomy leak rates in four staple-line reinforcement options: A systematic review. Surgery for Obesity and Related Diseases. 2014, 10:713-723. 10.1016/j.soard.2014.01.016
7. Aminian A, Andalib A, Khorgami Z, Kashyap SR, Burguera B, Schauer PR, Brethauer SA: A nationwide safety analysis of bariatric surgery in nonseverely obese patients with type 2 diabetes. Surgery for Obesity and Related Diseases. 2016, 12:1163-1170. 10.1016/j.soard.2016.05.007
8. Clapp B, Ponce J, DeMaria E, et al.: American Society for Metabolic and Bariatric Surgery 2020 estimate of metabolic and bariatric procedures performed in the United States. In Surgery for Obesity and Related Diseases. Elsevier Inc, 2022. 10.1016/j.soard.2022.06.284
9. Brethauer SA: Sleeve gastrectomy. In Surgical Clinics of North America. Volume 91. 2011, 1265-1279. 10.1016/j.suc.2011.08.012