Gastric perforation after splenic artery embolization and splenectomy:
A Rare Case Report and Review

Dr. Michael Huber, M.D.[1], Dr. Alexander Hien Vu, M.D., MSc.[1], Jacqueline Woo M.S.[2], Dr. Eric Chuang M.D.[1], Dr. Jesse Victory, D.O.[1]
[a] Department of General Surgery, New York University Langone Health

Background

- Gastric perforation following splenectomy, is associated with degree of morbidity and mortality. [1,2,3]
- The risk of gastric perforation following splenectomy is reported as less than 1% but has a mortality index of 60%.[5]
- Herein, we present a case of a gastric perforation following a traumatic splenectomy in the setting of a ruptured splenic artery aneurysm.[6,7]

Case Study

We present a case report of a 43-year old female with a history of multiple prior surgical interventions including appendectomy, cholecystectomy, Hartmann procedure for perforated diverticulitis, and subtotal colectomy with end ileostomy for cecal perforation, who presented with sudden onset severe abdominal pain, tachycardia, and hypotension without any known inciting factor.

- **Perioperatively** on admission, was found to have large volume hemoperitoneum secondary to a distal splenic artery aneurysm rupture on cross-sectional imaging, was taken emergently for an exploratory laparotomy and underwent empiric mid-splenic artery embolization with return for repeat abdominal washout, removal of packing, and fascial closure on multiple subsequent days.
- **Postoperatively** she developed a fluid collection, increased drainage from drains, concerning for a gastric perforation on repeat imaging. This required multiple IR drainage procedures, and endoscopic repair of the gastric perforation. Ultimately, the patient was successfully advanced to a regular diet and was discharged home on antibiotics.



Figure 1. CT axial imaging of splenic artery aneurysmal rupture.

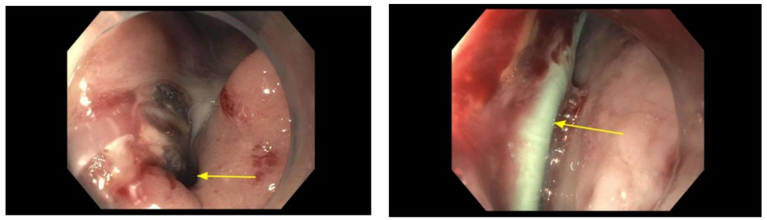


Figure 2. Gastric perforation with pigtail catheter visible through defect

Discussion

Although rare, gastric perforation after splenectomy has a high degree of morbidity and mortality4 and should prompt serious consideration and treatment.

- Gastric perforation should be included in the differential diagnosis for all patients who present with pain in the left upper quadrant and left shoulder, along with fever, tachycardia and upper abdominal tenderness after splenectomy.
- Chest radiographs may show the presence of a pleural effusion in the left hemithorax, and, if drains are placed post operatively, increased drainage in the left subphrenic space.[4,5]
- As in this particular case, placement of drains in the subphrenic space allowed for the early recognition of this complication.
- Small perforations may be amenable to endoscopic repair, and it is possible to avoid taking these patients back to the operating room for open repair.

References

1. Martinez CA, Waisberg J, Palma RT, Bromberg SH, Castro MA, Santos PA. Gastric necrosis and perforation as a complication of splenectomy. Case report and related references. Arq Gastroenterol. 2000 Oct-Dec;37(4):227-30.
2. Bryk D, Petigrow N. Postsplenectomy gastric perforation. Surgery. 1967 61(2):239-41.
3. Harrison BJ, Glanges E, Sparkman RS. Gastric fistula following splenectomy: its cause and prevention. Ann Surg. 1977 Feb;185(2):210-3.
4. Qu Y, Ren S, Li C, Qian S, Liu P. Management of postoperative complications following splenectomy. Int Surg. 2013 Jan-Mar;98(1):55-60.
5. Graves HA Jr, Nelson A, Byrd BF Jr. Gastrocutaneous fistula--as a postoperative complication. Ann Surg. 1970 May;171(5):656-62.
6. PECK DA, JACKSON FC. Splenectomy After Surgical Trauma. Arch Surg. 1964;89(1):54–65.
7. DAOUD FS, FISCHER DC, HAFNER CD. Complications Following Splenectomy With Special Emphasis on Drainage. Arch Surg. 1966;92(1):32–34.

Disclosures

The authors declare that they have no relevant or material financial interests that relate to the research described in this poster