Robotic Precision: Novel Approach to Splenic Vein Aneurysm Management

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Background

Splenic vein aneurysm (SVA) is an extremely rare finding, with very few cases described in the medical literature. First reported by Lowenthal et al. in 1953, there have since been only 8 other cases of SVA recorded in the English literature. Given the rarity, no clear practice guidelines exist. Many SVA are associated with portal hypertension or a congenital defect of the splanchnic vasculature. SVA over 3 cm may lead to rupture, thrombosis, or obstruction of adjacent structures. Excision is the most commonly performed treatment, however other approaches have been infrequently described, including observation with serial imaging, plication, and endovascular stenting. No robotic-assisted intervention has been documented to date.

Case Description

Patient presentation

- 22-year-old, recently postpartum, female presented to the ED with worsening LUQ abdominal pain.
- CT angiogram of abdomen incidentally revealed a **2.7cm x 4.5cm splenic vein aneurysm** (see Figure 1).
- Initially referred to vascular surgery who recommended serial imaging
  - CTA at a 3-month interval showed the aneurysm to be stable in size, but intimately associated with the tail of the pancreas.
  - Referred to hepatopancreaticobiliary surgery who recommended robotic-assisted splenectomy with proximal ligation of the splenic vein

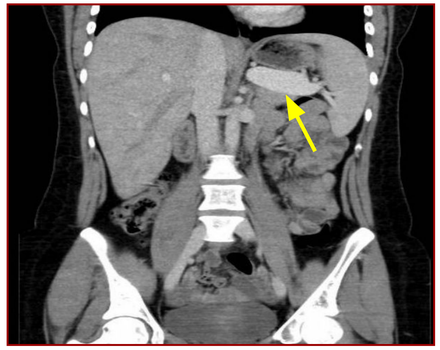
Case Details

- See panel right

Post-op Course

- She has since been seen in the outpatient setting and is doing remarkably well. We hope that this case contributes to the larger body of literature that may one day aid in developing consensus guidelines on management and prognosis.

Pre-Op Imaging



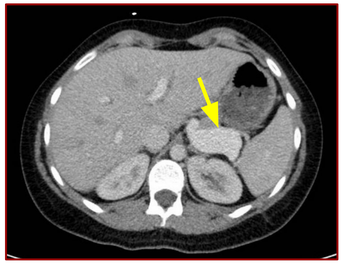
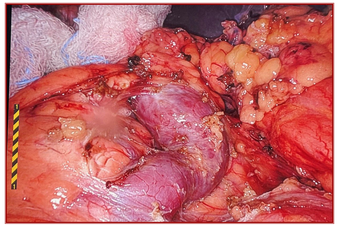


Figure 1: Axial (above) and Coronal (left) views of dilated splenic vein. Venous delay phase

Case Details

- Veress needle at Palmer's point followed by 8 mm Optiview trocar and 3 additional ports (one 12mm and two 8mm) placed
- Entered the lesser sac through the gastrocolic ligament, ligated the short gastritis, and exposed splenic hilum
- Dissected the splenic vein proximally to find a non-aneurysmal segment of vein for ligation. The splenic artery was encountered and clipped
- Mobilized the pancreas inferiorly to dissect the splenic vein. This was circumferentially dissected free about one-third of the distance from the end of the distal pancreatic tail and a ligated with 0-silk suture and three clips (see Figure 2)
- Superior pole of spleen remained perfused, a bifurcated splenic artery was identified and clipped.
- Spleen was placed in an Endocatch bag and removed via an extension of the 12mm port
- 19 Fr JP drain was placed adjacent to resection field.
- Fascia closed and patient sent to PACU in stable condition



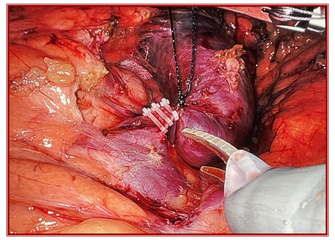


Figure 2: Intraoperative images of the splenic vein aneurysm pre and post-ligation

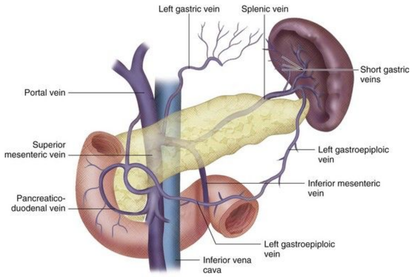


Figure 3: Schematic of splanchnic venous anatomy

Discussion

- Splenic vein aneurysms are a very rare occurrence
- There are no established guidelines that help clinicians to surveil or treat this pathology
- We offer a unique curative approach with the use of advanced robotic surgery
- Advantages of robotic surgery include decreased LOS, lower risk of infection, decreased pain, better visual resolution for the surgeon, and improved ROM/ergonomics during the operation
- We hope that our case will add to the existing literature and help devise a set of recommendations for evaluation/treatment of SVA

Citations

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