Superior Mesenteric Vein Thrombosis After Laparoscopic Sleeve Gastrectomy: A Case Report

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Abstract

Introduction / Purpose: A 46 year-old female underwent a laparoscopic sleeve gastrectomy weight loss procedure. The immediate postoperative course was unremarkable and she was discharged home from the hospital on postoperative day 1 after a negative upper GI study (Figure 3).

Case Description: The patient was admitted to theiatric surgical service on postop day 12 with epigastric tenderness and an distended small bowel. A computed tomography (CT) scan that illustrated superior mesenteric vein (SMV) thrombosis and a thickened loop of small bowel (Figure 4). Therapeutic heparin treatment was initiated and the patient was placed on antibiotics. Serial CT scans were obtained and correlated with the patient’s clinical appearance.

Outcome: Due to minimal improvement of the patient’s CT scans and continued abdominal pain a diagnostic laparoscopy was performed on post-op day 14. A 19 cm segment of dilated, ischemic bowel with mesenteric congestion was found. Intraoperatively and necessitated a small bowel resection (Figure 5). Pathology illustrated mesenteric venous congestion. Postoperatively the patient was anticoagulated and seen in consultation by a hematologist. The patient was eventually discharged home on therapeutic heparin.

Conclusion: The literature cites intraoperative manipulation, pnuemonenteponune and undiagnosed thrombophilies as possible etiologies of post-laparoscopic portal and superior mesenteric venous thrombosis. This pathology should be considered in the differential when evaluating patients 1-2 weeks after laparoscopy with new onset abdominal pain.

Hospital Course

**Figure 1:** Timeline

**Figure 2:** Diagram illustrating the post-operative anatomic appearance of a sleeve gastrectomy (7).

**Figure 3:** Upper GI study performed on post-operative day 1. No extravasation of contrast was identified.

**Figure 4:** CT scan upon presentation to the Emergency Department on post-operative day 12. Note the thrombus within the SMV (A), splenic vein (B) and inflamed loops of small bowel in the left lower quadrant (C).

**Figure 5:** Intraoperative findings – Inflamed, dilated, edematous in situ loop of jejunum (A) with noted mesenteric congestion after exteriorization (B) and intraluminal thrombosis (C).

Discussion

Mesenteric venous thrombosis is a rare complication of laparoscopic surgery with less than a 1% incidence reported across a variety of laparoscopic procedures (1-3,5). A retrospective analysis of laparoscopic sleeve gastrectomy as having the highest frequency of all laparoscopic procedures excluding laparoscopic hysterectomy (3). Pneumoperitoneum, undiagnosed hypercoagulable disease and intraoperative maneuvers of the mesenteric vasculature have all been identified as possible contributing factors to this laparoscopic morbidty (4).

Specifically, undiagnosed hypercoagulable states have been found to be the cause of post-laparoscopic portal and superior mesenteric venous thrombosis. This complication has been correlated with the patient’s clinical appearance. Early diagnosis may be key to preventing further surgical and invasive procedures.

Operative Details

Under general anesthesia the patient initially underwent an uncomplicated laparoscopic sleeve gastrectomy. With the patient in steep reverse Trendelenburg position a flexible liver retractor was used to elevate the left lobe of the liver, the greater curvature was mobilized and a harmonic scalpel and the spleen retracted with a Harmonic ACE using green and blue Endo-GIA Dual cartridges. Intraoperatively a 4 cm distal hemigastrectomy was identified and the distal stomach was transected with a GIA stapler. The mesentery was repaired with interrupted 2-0 Surgicel sutures. At the end of the procedure an esophagogastroplasty procedure (EAPD) was performed and no staple line leak was identified. Estimated blood loss was 20 mL.

On postoperative day number 14 the patient underwent a diagnostic laparoscopy for ischemic bowel. A 10 cm segment of small bowel was found to be ischemic, dilated and edematous. A 10 cm segment of small bowel was exteriorized and an extracorporeal small bowel resection with subsequent side-to-side anastomosis was performed employing a 75mm GIA stapler with blue loads. The mesenteric defect was closed with four interrupted 3-0 vicryl sutures. The abdominal wall was closed in layers, the bowel inspected laparoscopically and the procedure concluded.

The final pathology reported a 34 cm segment of ischemic small bowel exhibiting edema, hemorrhage and vascular congestion. Organized thrombus was appreciated within associated veins that demonstrated acute phlebitis. Proximal and distal margins were viable.

Conclusion:

The literature cites intraoperative manipulation, pneumoperitoneum and undiagnosed thrombophilies as possible etiologies of post-laparoscopic portal and superior mesenteric venous thrombosis. This rare pathology should be considered in the differential when evaluating patients 1-2 weeks after laparoscopy with new onset abdominal pain. Early diagnosis may be key to preventing further surgical and invasive procedures.

References