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Case Report

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Port Site Hernia Presenting with GI Bleeding; A Case Report

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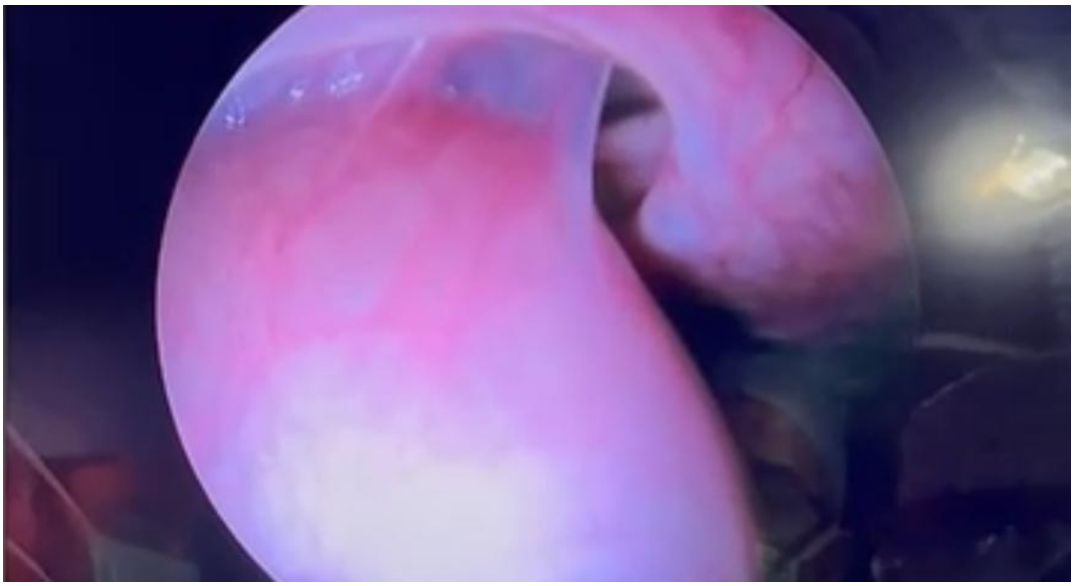
Abstract

Port-site hernia is a rare complication that can develop after laparoscopic Roux-en-Y gastric bypass (LRYGB). We describe a case involving a 44-year-old female with an unusual presentation of a port-site hernia and upper gastrointestinal bleeding occurring one month following LRYGB. A Computed Tomography Scan of the abdomen and pelvis demonstrated a short segment of the jejunal loop entrapped within the abdominal wall, without evidence of active bleeding or oral contrast leak. The patient underwent laparoscopic exploration, during which the hernial defect was repaired, as well as a blown-out gastrojejunal anastomosis. In conclusion, while both port-site hernias and gastrointestinal bleeding are rare complications after LRYGB, their concurrent presentation is exceptionally uncommon.

Figure 1: Intraoperative image demonstrating a segment of the small bowel protruding into the abdominal wall defect.



1. Introduction

A potential complication recognized after laparoscopic surgery, specifically gastric bypass, is gastrointestinal (GI) bleeding [1]. GI bleeding is generally categorized into upper and lower sources, which can be separated by the ligament of Trietz as a landmark [2]. The etiologies of GI bleeding are vast and beyond the scope of this research; here, we will discuss post-surgical bleeds, specifically post-anastomotic bleeding.

Post operative GI bleeding is generally classified according to anatomical location into; Intraluminal bleeding, or Intra-abdominal bleeding and can occur anywhere within the GI tract [3]. In the assessment of postoperative gastrointestinal bleeding, it is crucial to take into account the time based classification. Bleeding occurring within the first 12-48 hours post operation is described as acute or early bleeding, and can be evident up to 42 days. Late or chronic bleeding is defined as any bleeding manifesting more than 42 days after the surgical procedure [4,5].

The incidence of GI bleeding after laparoscopic gastric bypass ranges from 1.1% to 4% [1]. Introduction of staple line reinforcing products, advanced staplers and hemostatic agents such as fibrin, have all contributed to the decline in the incidence of bleeding. GI bleeding after gastric bypass can originate from the following locations: the gastric pouch staple lines, the gastrojejunal anastomosis, the jejunojejunal anastomosis, and the gastric remnant. Bleeding from the gastrojejunal anastomosis or the gastric pouch typically presents with hematemesis, whereas melena usually indicates bleeding at either the gastric remnant or the jejunal anastomosis [6].

Another relatively rare complication is port site hernias (PSH), which are a subtype of incisional hernias that develop through a trocar site following laparoscopic surgery. Although rare, occurring at a rate of 0.2% to 0.7%, the complications can be significantly serious [7]. The first laparoscopic surgeries were performed in the 1910s; however, the first PSH was reported after a gynecological surgery, and the first PSH after a laparoscopic cholecystectomy was reported in 1991 [8].

PSH are associated with various risk factors, including older age, malnutrition, and a higher BMI. They typically develop in larger port sites measuring >10 mm and are commonly observed in umbilical and midline incisions due to the different fascial structure compared to lateral incisions. The linea alba, which runs through the midline, lacks muscular support, leading to less resilience against intra-abdominal pressure. Another significant risk factor is the type of trocar used, with higher rates of PSH noted with pyramidal trocars compared to conical or blunt ones [9,10].

2. Case presentation

A 44-year-old female patient was admitted to the hospital complaining of a first-time occurrence of vomiting fresh blood with small clots and passing dark stool for a duration of 12 hours. This patient had undergone one surgery that combined laparoscopic Roux-en-Y gastric bypass, cholecystectomy, hiatal hernia repair, and paraumbilical hernia repair just one month before presentation. Her past surgical history is also significant for a laparoscopic sleeve gastrectomy performed 5 years prior. The patient denied any other symptoms, and her clinical examination revealed intact hernial orifices. A CT angiography of the abdomen showed a short segment of jejunal loop impinged within the abdominal wall, without evidence of active bleeding or oral contrast leak.

Vital Sign	Patients Result
Heart Rate	134
Blood Pressure	109/64
Respiratory Rate	16
Oxygen Saturation	100

Table 1: Patients Vital Signs Upon Admission.

Figure 2: Computed tomography of the abdomen and pelvis with IV contrast (transverse section) showing port site hernia

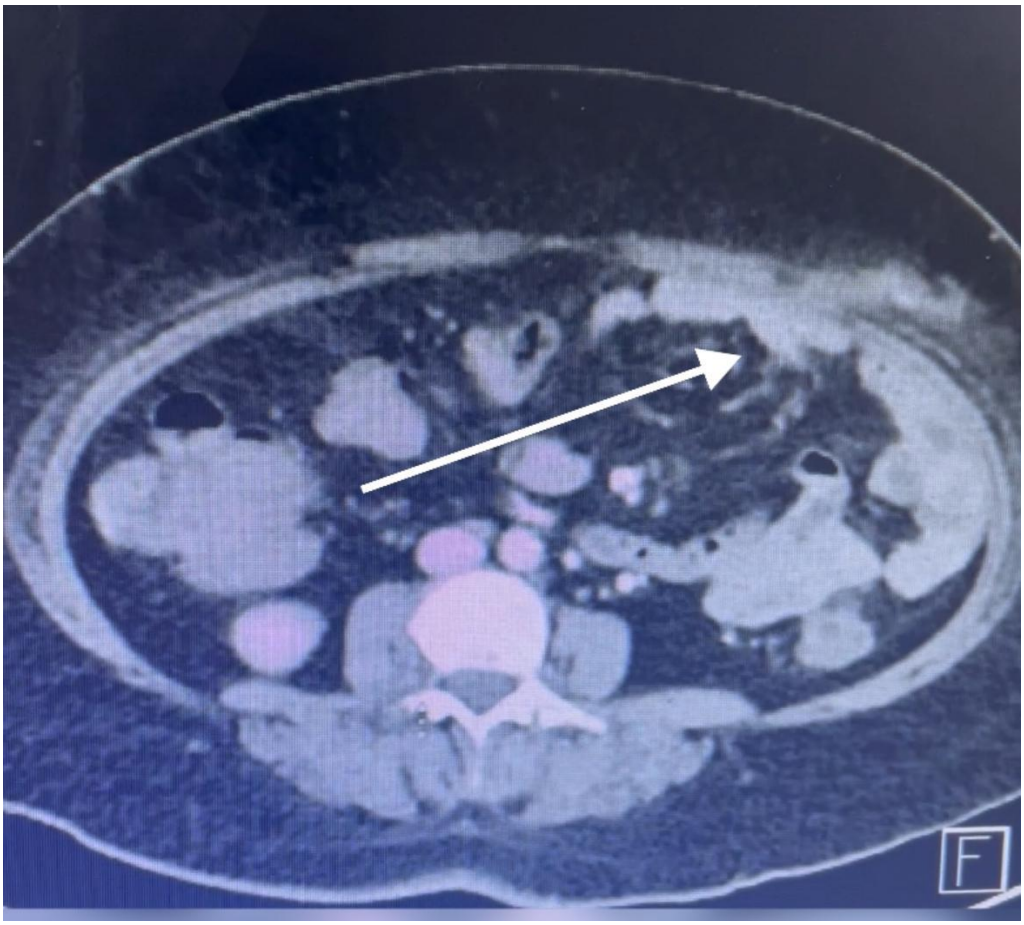
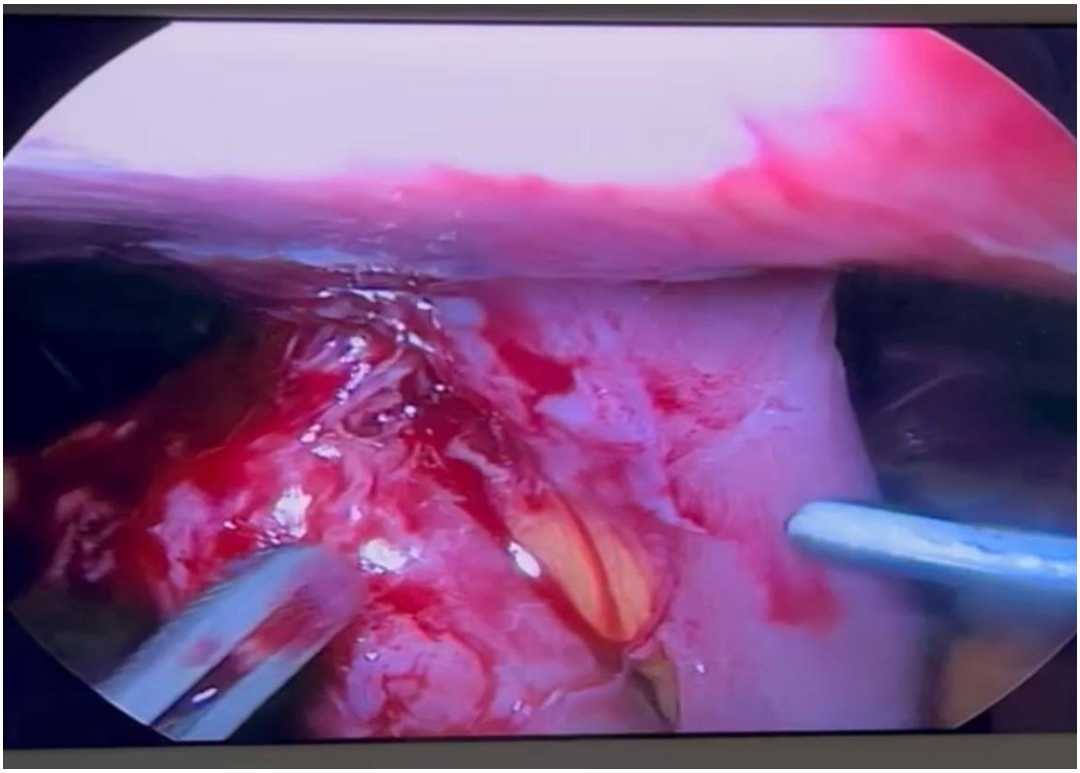


Figure 3: Computed tomography of the abdomen and pelvis with IV contrast (sagittal section) showing port site hernia.

Laparoscopic exploration was performed using a four-port technique. The defect in the left midclavicular 12 mm port site hernia was first identified. A circumferential portion of the jejunum was invaginated within the hernia and adhered to the abdominal wall. Adhesiolysis was performed, and the defect was closed by primary closure with absorbable sutures and the hernial contents were reduced. We then identified a blown-out gastrojejunal anastomosis, which was repaired primarily. Examination with methylene blue showed no leak. Lastly, right and left-sided drains were inserted into the abdomen.

Figure 4: Intraoperative image showing a disrupted gastrojejunostomy anastomosis.



The patient remained in the ICU for 4 days after surgery. Her hematological and biochemical markers were abnormal, but she was adequately resuscitated and then transferred back to the surgical ward. She remained NPO for the following week and was monitored closely. A gastrografin study and CT abdomen were performed, revealing findings that were concerning for either oral contrast leakage from the stomach at the site of gastrojejunostomy or a blind-ended jejunal pouch. After extensive discussion, we decided to keep the patient under close monitoring. Over the following days, she remained clinically and biochemically stable. We then gradually weaned her onto an oral diet, and she made a recovery and was discharged.

Three weeks later in the OPD follow up the patient was complaining of a bulge at the left side of the abdomen, on physical examination it was evident that she had developed a reducible hernia at the left port site with weakness. She immediately did a CT Abdomen which showed an uncomplicated port site hernia containing bowel loop. Patient was admitted and underwent laparoscopic exploration that revealed a left midclavicular port site hernia defect measuring 5*5 cm, primary hernial repair was done and bowel content was reduced and composite mesh was applied. An umbilical hernia defect was also visualized and primary repair was conducted. The patient's physical examination and laboratory investigations remained normal in the following 3 days where the patient resided in the surgical ward and was then discharged.

3. Discussion

Our patient presented with severe gastrointestinal symptoms, including hematemesis and melena, just one month after undergoing complex surgery involving laparoscopic Roux-en-Y gastric bypass, cholecystectomy, and hernia repairs, with a history of laparoscopic sleeve gastrectomy. Initial imaging via CT angiography showed a jejunal loop impinged within the abdominal wall, without active bleeding. Laparoscopic exploration identified and repaired a hernial defect and a blown-out gastrojejunal anastomosis, with successful closure verified by methylene blue testing. Post-surgery, the patient was admitted to the ICU due to abnormal hematological markers but stabilized with resuscitation. Despite initial concerns of leakage at the gastrojejunostomy site or a blind-ended jejunal pouch, extensive monitoring showed clinical stability, allowing for the gradual reintroduction of an oral diet and eventual discharge after recovery.

Anastomotic leaks following laparoscopic Roux-en-Y gastric bypass (LRYGB) are among the most feared complications, as they can ultimately lead to death. Fortunately, the incidence of leakage varies between 0.1% and 5.6%. In a study conducted in 2014 involving 6,030 patients who underwent LRYGB, only 64 patients in the group developed an anastomotic leak. When discussing the different treatment approaches to anastomotic leaks, the initial presentation of leakage post-LRYGB is crucial. Patients who presented with an early anastomotic leak (less than 5 days post-operation) were primarily treated by suturing the defect (20 out of 22 patients). In contrast, patients with late presentation (more than 5 days post-operation) were most often treated with operative drainage (19 out of 23 patients). Out of the entire group, only 5 patients (0.08%) experienced both anastomotic leakage and trocar-port (Richter's) hernias simultaneously [11].

In a retrospective study of 400 morbidly obese patients treated with RYGB (326 by open RYGB and 74 by laparoscopic RYGB), 21 patients developed leaks. The most common locations of leakage were noted, with thirteen (62%) of these patients having leaks at the gastrojejunal anastomosis, while only four patients (19%) developed leakage from the jejunojejunal anastomosis. Commonly observed signs and symptoms in these patients included fever, chills, tachycardia, nausea, malaise, and shortness of breath (secondary to a reactive pleural effusion) [12].

An analysis of 18 studies conducted among 11,699 patients that underwent laparoscopic gastrointestinal surgeries, with a percentage of 0.74% of port site hernia development, it was demonstrated that bariatric surgery patients had the lowest rate of developing PSH at a rate of 0.57%. In comparison to post laparoscopic colorectal surgeries where the rate was as high as 1.47%. In another study that evaluated the incidence of PSH development in 624 obese patient that had underwent various laparoscopic procedure all done without fascial closure it was revealed 10 patients showed port site hernia, for an overall prevalence of 1.6%. The mean time of occurrence was 15 months. No other complications were observed secondary to the hernia including symptoms of bowel obstruction. [13].

4. Conclusion

The case of our 44-year-old female patient illustrates the complexities and potential complications associated with laparoscopic Roux-en-Y gastric bypass and related surgical procedures. The occurrence of severe gastrointestinal symptoms shortly after surgery highlights the critical need for vigilant monitoring and prompt intervention in the event of complications such as anastomotic leaks. While the incidence of these leaks remains relatively low, ranging from 0.1% to 5.6%, their management requires careful consideration of the timing of presentation and appropriate treatment strategies. Our patient's successful recovery underscores the importance of thorough surgical techniques, effective postoperative care, and the role of comprehensive monitoring in ensuring favorable outcomes. Continued research and awareness of the risks associated with such surgeries are essential for improving patient safety and surgical success in the evolving landscape of bariatric surgery.

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