

Post Roux-En-Y Gastric Bypass Lateral Port Site Hernia: Early Detection Prevents Lethal morbidity

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ABSTRACT

There has been a global increase in laparoscopic bariatric surgeries which has also increased the incidence of complications such as trocar site hernias wherein the fascia is not routinely closed. A 48 year old female with a BMI: 45.61 kg/m² who underwent a laparoscopic RYGB returned on the 11th post op day with a complaint of pain and swelling on the left side of the abdomen. Physical examination findings showed a fluctuant tender swelling in the left lateral port site, suggestive of a seroma on ultrasound. CT scan abdomen showed fluid collection at the port site; drained using USG guided aspiration. The swelling reappeared the next day, repeat contrast CT abdomen suggested lateral port small bowel herniation. Emergency laparoscopy showed a congested jejunal loop herniating into the left lateral port which was reduced and closed. The patient recovered smoothly and was discharged after 2 days. A combination of early clinical suspicion, radiology findings and early operative intervention helped to prevent ischemia of the herniated segment of the jejunal loop. Bariatric surgeons should aim for closing the trocar sites to prevent such complications. Post-operative pain at the port site should raise suspicion and should validate the possibility of port site hernia and subsequent early intervention to reduce post-operative morbidity.

Keywords: Gastric Bypass; Trocar Site Hernia; Port Closure; Bowel Ischemia; Small intestine herniation

INTRODUCTION

A prominent and persistent problem which has led to an increase in health care problems is obesity which is associated with a wide variety of comorbidities. The lack of successful medical management has prompted the use of surgery as a constructive alternative tool to improve patient outcomes.^[1] A well-established but common complication of any laparoscopic surgery, whether bariatric or not, is the herniation from the port site due to inadequate or absent closure of the fascial defect.^[2]

CASE DESCRIPTION

48 year old female patient with BMI of 45.61kg/m² underwent an uneventful Roux-En-Y Gastric Bypass. A Veress needle was inserted from the epigastric incision site to create a pneumoperitoneum. Four 12 mm and one 5 mm trocars were used. End-to-end gastro-jejunosomy was made with circular stapler and side to side jejunosomy was made with Ethicon endostapler. Enterotomy was closed with an endostapler. Mesogap of the entero-enterostomy and the Peterson's defect were closed with EMS. Left lateral trocar site closed with 2/0 Vicryl Endoclose stitch. A multi luminal drain was inserted through lateral port entry point and placed in the subhepatic space. All other wound sites were closed with 3/0 Vicryl interrupted subcutaneous closure. Patient recovered smoothly and was discharged in stable condition on 2nd post operative day.

On 10th Post-op day, the patient presented to the emergency department with a swelling in left lateral 12 mm port site, with severe pain which was worsening in intensity with one episode of vomiting. Physical examination showed a soft, lax abdomen with tender and fluctuant swelling at the left side port, diagnosed as a seroma on ultrasound. Otherwise, the wounds were dry and healing well. The patient was vitally stable. CT scan abdomen showed fluid collection of the left lateral abdominal wall at the port site with no intra-abdominal extension (Figure 1). Ultrasound guided aspiration of serous fluid was done after which the pain had reduced, and the patient was started on IV antibiotics, analgesics. But the swelling reappeared after one day of aspiration. CT scan abdomen with contrast was done to determine the contents and showed an anterior abdominal wall defect, at the left lateral port site measuring about 4.5 cm at its maximum anteroposterior dimension, with extension of herniated small bowel loops (Figure 2) seen measuring 3.5 cm at its maximum diameter. This finding was associated with a collection of fluid in the lateral abdominal wall (Figure 3) and mild stranding of the surrounding fat plane likely suggestive of incarcerated incisional hernia (Figure 4). All other organ systems on CT were reported to be unaffected.

The patient underwent emergency diagnostic laparoscopy. Using the previous supraumbilical incision, with visiport camera port was created. Under vision 5 mm epigastric port and 12 mm right lateral port was created using previous incision site. Strangulated jejunal bowel loop was found herniating inside the left lateral port (Figure 5) which was difficult to reduce using only laparoscopic atraumatic graspers. Hence the hernia content lateral port was opened externally, and with external finger compression-manipulation maneuver along with laparoscopic intraabdominal traction (Figure 6), the incarcerated jejunal loops were gently reduced inside the abdominal cavity, taking care not to injure the bowel loops. The bowel loop was reduced completely and found to be congested but viable. The herniated jejunal loop color came back to normal in few minutes after complete reduction with visible peristalsis.

The mesentery and both proximal and distal parts were checked. No bowel injury was found. The reactionary fluid collected was aspirated, and the lateral port cavity was washed with plenty of normal saline. The port defect was closed with two interrupted stitches using 2-0 Prolene (Figure 7). Pelvic drain was placed for post of drainage of any reactionary collection. The lateral port was again irrigated with 100 ml Normal Saline externally and a counter small, corrugated drain placed in the cavity. Port closure was done with 2-0 Vicryl. Post operatively patient improved smoothly and tolerated progressive diet. Patient was discharged from the hospital after 5 days of readmission for trocar site hernia.



Figure 1: Fluid collection in lateral abdominal wall in the lateral port site (white arrow).

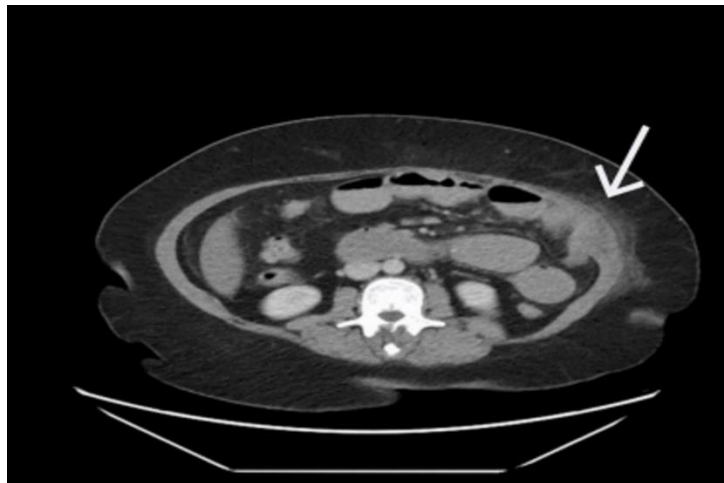


Figure 2: Herniation of jejunal loop into lateral port defect (white arrow).

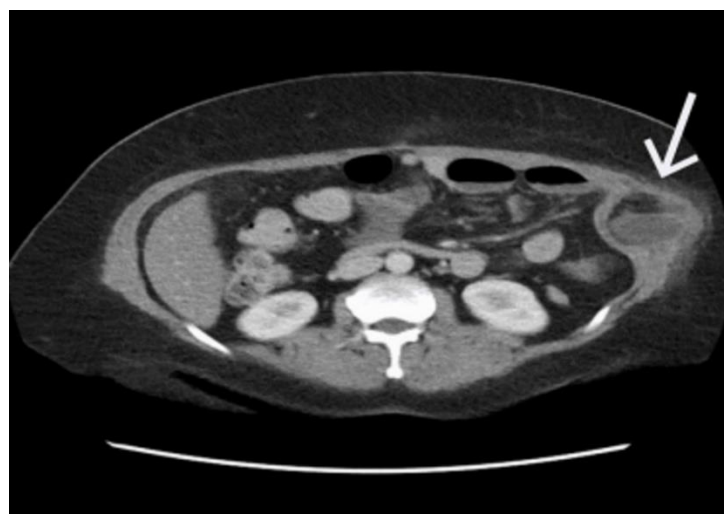


Figure 3: Dilated small intestine loop in lateral port defect with fluid content (white arrow).

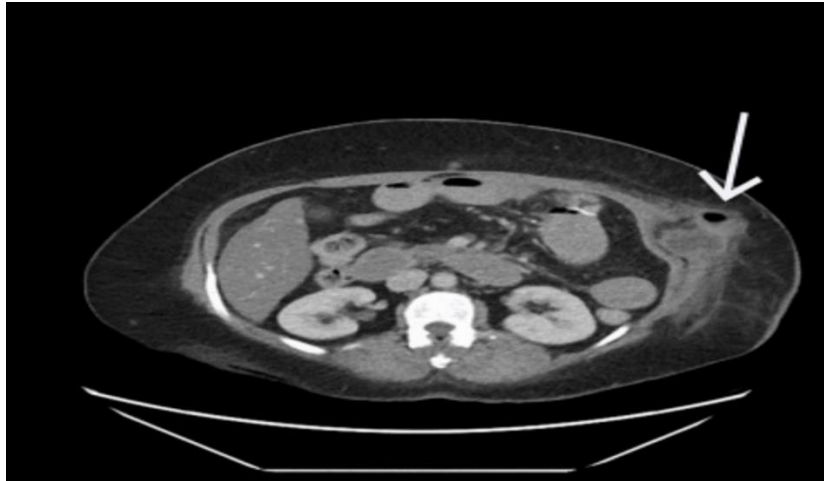


Figure 4: Incarcerated port site hernia with intestinal content (white arrow).



Figure 5: Intraoperative finding of incarcerated small Intestinal Loop through lateral port site (black arrow).

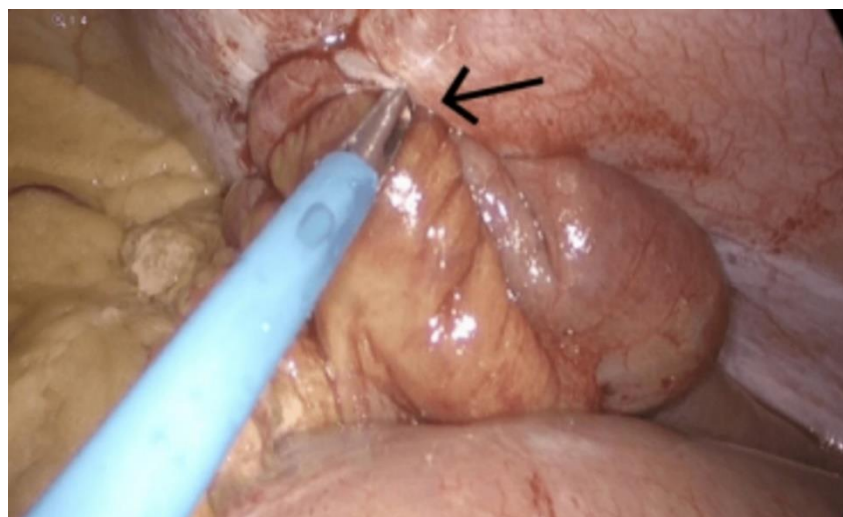


Figure 6: Laparoscopic reduction of herniated jejunal loop with assistance of external manual compression (black arrow).

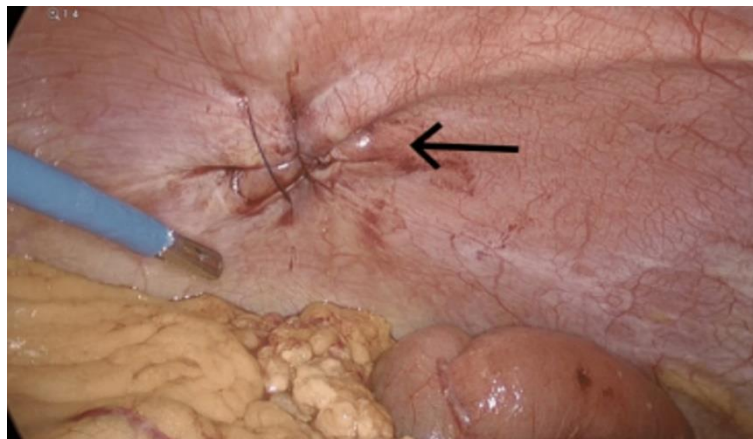


Figure 7: Closure of lateral port defect with 2-0 Prolene suture.

DISCUSSION

Trocar site incisional hernias that occur post laparoscopic surgeries are ascribable to the failure or inadequate closure of the port.^[3-5] There has been an increase in the reported number of cases of trocar site hernias in other studies conducted worldwide. Very high rates of trocar site hernias have been reported in long-term running studies with rates estimated as high as up to 0.8-2.9%.^[6-7]

Certain risk factors have been found to occur more commonly in patients with trocar site hernias.^[8] The clinical risk factors include diabetes, immunosuppression, abdominal aortic aneurysm surgery, steroid treatment, COPD, renal failure, cachexia, malignancy, male, anemia, obesity, advanced age, smoking and poor nutrition.

An incomplete closure of the fascia during a laparoscopic surgery has indicated a higher incidence of incisional site hernias.^[9-11] Research has found a higher incidence of trocar site hernias when larger diameter trocars are used and especially in ports that are manipulated to collect the specimen^[12-14] which is in line with the results obtained from our study. It is recommended that larger ports with a diameter greater than 10 mm should be closed as they have a higher incidence of development of post side hernias.

It has found that the incidence rates of port side hernias is higher in obese patients due to a thickening of the preperitoneal space and an increased intra-abdominal pressure contributing to an often difficult and inefficient closure of the fascia in such patients.^[15]

Certain studies by Azurin et al^[16], Duron et al^[17] and Plaus^[3] have demonstrated that the incidence of hernias depend on the location of the incision and that there is a greater predisposition of incidence in midline ports in comparison to lateral ports. This occurs due to the overlap of the muscle and fascia in the midline. However, this was not what was observed in our case. In addition other mechanical risk factors of trocar site hernias include open laparoscopy (Hasson trocar insertion), type of material used to close the wound and the technique that is adopted for closure.^[10]

The reported cases of trocar site hernias may be underreported due to the presence of only minor symptoms or sometimes the complete absence of any symptoms at all. Fallacy in follow up and inconsistency between different imaging findings can also make diagnosis more difficult, further decreasing the documented incidence rate that may exist.^[18]

A study^[18] conducted on 76 patients showed an incidence rate of 27.6% of patients clinically diagnosed to have trocar site hernia out of which only 23.7% were radiologically confirmed to have the condition. Some other studies on the other hand had reported a very low prevalence of <1% of trocar site hernia post laparoscopic surgeries. However these studies had limited data and were determined based on retrospective studies with inadequate follow ups.^[8] A study conducted has found that there is a higher incidence of hernia in bariatric surgeries in comparison to non-bariatric surgeries.^[19]

Infection of the wound has also been implicated as the cause of trocar site hernia in some reports.^[12-14] A 5 of 6 prophylactic use of rifampin has reported a reduced occurrence of incisional hernias.^[20] However, the procedure conducted in our study was done under strict aseptic measures.

CONCLUSION

Laparoscopic surgery has become widely popular due to its advantages like shorter hospital stay, and a faster return to normal life. Due to increase number of operations, trocar site hernias have become fairly common to encounter in patients, where ports were not properly closed. A strict compliance regimen should be adapted, and a thorough examination and imaging modality must be performed to detect incisional hernias. A high index of clinical suspicion must be maintained by the physician to detect asymptomatic port side hernias and patients should therefore be encouraged to follow up at regular intervals.

DISCLOSURE

The author reports no conflicts of interest in this work.

FINANCIAL RELATIONSHIPS

All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work.

ETHICAL REVIEW

Written informed consent was obtained from the patient for the publication of this case report and can be presented to the Editor on request.

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