

## Case study

# VERY EARLY DRAIN SITE HERNIA WITH INTESTINAL OBSTRUCTION AFTER LAPAROSCOPIC APPENDECTOMY AND DEBULKING OF A MUCINOUS NEOPLASM OF APPENDIX : A CASE REPORT

## ABSTRACT

INTRODUCTION -Trocar site hernia is a rare but potentially life threatening complication of laparoscopic surgery. Among trocar sit hernia drain site herniation is an even rarer complication. Also, due to its low prevalence it is usually diagnosed late and there is a delay in surgical intervention. Herein, we report a case of jejunal loops herniating through a 10mm drain site in a case of laparoscopic appendectomy with debulking for mucinous neoplasm of appendix. CASE SUMMARY - A 76 year old male k/c/o hypertension who underwent laparoscopic appendectomy with debulking for low grade appendiceal neoplasm presenting on post operative day 8 with c/o pain in abdomen and vomiting and inability to pass stool or flatus since 3 days. Pt was hypotensive and was admitted in the ICU for further management. Pt was resuscitated with fluids and iv antibiotics and ct abdomen was performed on day 3 of admission as obstruction was not settling which was suggestive of jejunal loops herniating through the lateral abdominal wall. Pt was taken up for emergency laparotomy and a drain site hernia was diagnosed which was reduced and bowel loops were found to be viable.

Herniorrhaphy was done. Pt recovered well and was discharged on post operative day 9.

CONCLUSION - Trocar site hernia from drain is a rare complication that must be kept in mind following laparoscopic surgery. There must be high degree of suspicion to avoid serious complications like necrosis or gangrene of the bowel segment. Also all 10 and 12 mm ports must be closed under vision following laparoscopic surgeries to avoid herniation.

Keywords – appendectomy laparoscopic Adhesions appendicular mucinous tumors Drainage Hernia Laparoscopic appendectomy.

Abbreviations – TSH – Trocar Site Hernia.

## INTRODUCTION

Trocar site hernia (TSH) is a rare and potentially dangerous complication of laparoscopic surgery. The incidence of TSH is shown to be 0.3% - 5.4% depending on several factors like age, BMI, trocar size, previous history of hernia, previous surgery and trocar design[1][2]. However the most important factor affecting the occurrence of TSH is trocar size. Hernias almost always occur in 10 and 12 mm ports and never in 5 mm ports as the musculo fascial planes in a 5 mm port are too small for the intra-abdominal contents to herniate through. Drain site TSH are a

special type of TSH that occur through the port where the intra-abdominal drainage tube is placed. All the 10 and 12 mm trocar sites are routinely closed under vision in laparoscopic surgery however the drain site musculo fascial planes and peritoneum has to be left open and cannot be closed leading to occurrence of drain site TSH.

Herein, we report a rare case of drain site TSH just 3 days after a laparoscopic appendectomy with debulking for mucinous neoplasm of appendix and how the complication was diagnosed and dealt with.

## CASE PRESENTATION

A 76 year old male, hindu by religion, married with 2 children, retired, with a BMI of 20.54 presented with chief complaints of pain in abdomen since 4 days vomiting since 4 days and inability to pass stool or flatus since 3 days.

This patient initially presented with non-specific complaints of loss of weight and appetite with intermittent abdominal pain and right inguinal hernia. A CT scan was performed of the abdomen and pelvis and it was suggestive of ascites with a lump in right iliac fossa. A provisional diagnosis of mucinous appendiceal neoplasm was made and pt was planned for laparoscopic appendectomy with debulking of the ascites as the patient was deemed not clinically fit for total peritonectomy with HIPEC due to age and other comorbid conditions as well as presence of the advanced disease.

Surgery was done uneventfully via 4 ports. 2, 10 mm pots on the left lateral abdominal wall and 1, 5 mm on the lateral abdominal wall and 1 5 mm on the infraumbilical region. Appendectomy was done and thorough wash given with warm saline after removal of almost all mucinous deposits on peritoneum. A 24 fr abdominal drain was placed in the pelvis through one of the 10 mm trocar sites and fixed in place.

The patient had a relatively uneventful post op course and drain was removed on post op day 3 and pt opened bowels 3 times before being discharged in post op day 4.

Patient then presented on post op day 10 in the emergency department with complaints of severe pain in abdomen that was generalized with distension no aggravating or relieving factors. Pt also was not able to pass stool or flatus since 4 days and had 4 to 5 episodes of bilious vomiting over 3 days. Also he had not passed urine since 1 day.

## EXAMINATION

GENERAL EXAMINATION – P 110/min, BP 80/50 mm hg, spo2 97 % on room air. Pallor present, no icterus cyanosis clubbing or lymphadenopathy. Sunken eyes and dry oral mucosa with loss skin turgor.

S/E PA Distended and tender with guarding and rebound seen rest of s/e was WNL. On PR rectum was empty and roomy without any fecal impaction.

#### TREATMENT

Patient was admitted in the intensive care unit and 2 large bore IV cannulas were placed and aggressive fluid resuscitation was done following which patient was hemodynamically stable. Ryle's tube insertion was done and yielded 2.2 litres of bilious aspirate that was mildly feculent. Patient had an elevated creatinine of 2.4 and very low urine output. Central line insertion done and fluid resuscitation was continued. Adhesive obstruction was suspected and conservative line of management was planned. He settled hemodynamically but was yielding 2 liters of ryles tube aspirate daily.

Decision was taken to perform a CT scan of abdomen and pelvis which showed bowel loops herniating through the left lateral abdominal wall. However one peculiar finding noted on the scan was that the extern oblique was obliterated and the internal oblique and transversus abdominis planed were gaping wherein the bowel loops had herniated suggesting that the herniation occurred around 1 to 2 days after removal of drain.

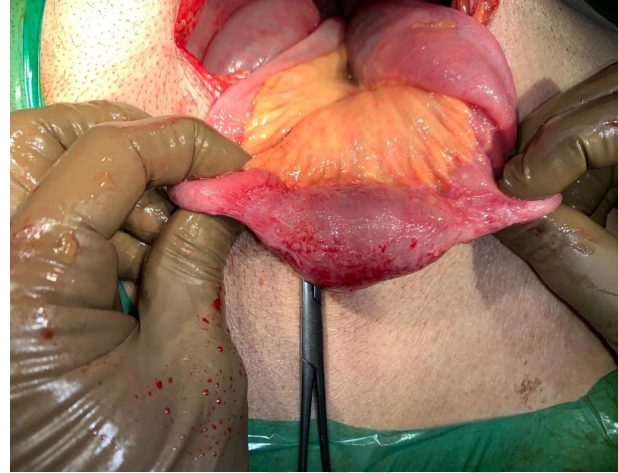


FIG 1 BOWEL LOOPS HERNIATING ON CT SCAN

Pt was taken up for urgent laparotomy and jejunal loops were seen herniating through the drain site. Bowel reduced and was found to be viable. Thorough wash given. Defect closed with 1-0 vicryl and herniorrhaphy done. Patient had a relatively uneventful post-operative course and was discharged on post-operative day 10. Patient remains comfortable and free of complications on 2 weeks follow up.



(FIG-2)



(FIG – 3)

BOWEL LOOPS HERNIATING THROUGH DEFECTVIBLE JEJUNAL LOOPS AFTER BEING REDUCED

## DISCUSSION

Over the course of the last 30 years laparoscopic surgery has gained immense popularity and widespread acceptance over abdominal surgery due to improved immediate post-operative results and reduced morbidity and faster recovery of the patients.

However, laparoscopic surgery does come with its own complications one of the most common and serious one being trocar site hernia. TSH is defined as protrusion of intra-abdominal contents into the abdominal wall from a trocar site. A study conducted by tonouchi et al. classified trocar site hernias into 3 types – 1 early onset type (where the hernia occurs within 2 weeks of surgery and most commonly presents as small bowel obstruction) 2 late onset type ( due to dehiscence of fascial planes presents without obstruction and consists of a sac of peritoneum) 3 A special type wherein dehiscence of the entire abdominal wall occurs anytime after surgery. [3]Drain site TSH are emergent conditions wherein if suspected a urgent usg or ct scan must be performed and subsequent laparotomy or laparoscopy must be done to prevent bowel gangrene.

Risk factors for TSH could be patient related or port related patient related factors are age, obesity, gravida status in females, personal factors such as bowel bladder habits, smoking causing chronic cough. However the more important factors are port size, position, whether sharp or blunt, instrument used through that particular port, technique of closure. 10 and 12 mm sharp ports inserted from midline have the maximum tendency to cause herniation post surgery. In our case the only risk factor was the age of the patient as the port used was non bladed and inserted in extraumbilical position. The only unusual point was that a 24 Fr drain was inserted from the 10 mm camera port. This caused an extremely rare early onset

herniation without a peritoneal sac and lead to small bowel obstruction only 5 days after removal of the drain.

Due to this complication Sanz et al have recommended routine fascial closure of all port sites more than 5 mm in multiple layers to close all musculofascial planes[4]. There have been multiple cases reported of TSH from 5 as also 3 mm ports after gynecological and surgical procedures however none of these have been drain site herniations.

Out of the reviewed literature Ramalingum et al, Manigrasso et al, and Xianggao et al. , were reports suggesting drain site TSH. Of these manigrasso reported a drain site hernia with the drain still in situ[5][6]. Ramalingum reported 5 early drain site hernias in a paediatric population of 148 cases however all of them had omentum as content[6] and gao reported a small bowel herniation 10 days after removal of drain[1]. We report a similar case here but ours is different and unique due to the fact that the jejunal loops herniated through the drain site a mere 3 days after removal of drain causing small bowel obstruction and also early signs of bowel ischaemia had set in.

## CONCLUSION

There is not much information available on the prevention of such herniations but what we can conclude from our study is that we must always close any port larger than 5 mm in multiple layers and any drain insertion should be done by taking a separate incision or from a 5 mm port. This is the best possible way to avoid these herniations in the future however any concrete evidence on these findings is yet to be established.

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