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# Small bowel hernia through an abdominal drain site

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## Abstract

Drain site hernias after laparotomy is a rare occurrence and are difficult to diagnose. In these cases, early diagnosis and treatment is important. We present a case of small bowel hernia through a drain site which was placed in the pelvis after abdominal surgery for ruptured abdominal aorta aneurysm. Repair of the ruptured abdominal aortic aneurysm was performed and a 30-fr Robinson drain was inserted in the pelvic region through a 12mm stab incision in the left lower abdomen. The drain was removed on 2nd postoperative day. The patient subsequently developed bowel obstruction and required a repeat laparotomy which revealed herniation of anti-mesenteric part of the small bowel at the drain site causing obstruction.

## Introduction

Intra-peritoneal drains have long been used in abdominal surgery and this practice still continues. They have many benefits including the prevention of intra-abdominal fluid accumulation, early detection of bleeding or anastomotic leak.[1] However, they can also cause complications including secondary infection, intestinal perforation, haemorrhage and adhesions.[2-4] Herniation through an abdominal drain site leading to incarceration or strangulation is rare.[4-10] In our case report, we aim to highlight this rare complication as it is important to be aware of its possibility because early diagnosis can be difficult and is important for its treatment.

## Case Report

A 79-year-old lady was admitted through A&E department with a ruptured abdominal aortic aneurysm and critical right leg ischemia. She underwent emergency laparotomy through a long

midline incision. After repair of the aneurysm, a 30-fr Robinson drain was inserted in the pelvic region through the left lower abdomen. The skin incision made to place the drain was 12 mm in length. Postoperatively, she was treated in ITU. She had multiple comorbidities including Type 2 diabetes mellitus, hypertension, asthma, previous myocardial infarction, cerebrovascular accident, pulmonary embolism and deep vein thrombosis. The early postoperative period was uneventful and the drain was taken out on 2nd postoperative day as there was minimal output. The patient was transferred to a surgical ward on 3rd postoperative day. At the time, she did not have abdominal pain, bowel sounds were present and she was passing flatus.

On the ward, she developed bowel obstruction and was taken back to theatre for an emergency relaparotomy. Her preoperative abdominal x-ray showed small bowel obstruction. A 2cm long portion of the anti-mesenteric part of the small bowel was seen to be incarcerated into the abdominal wall where the drain was previously inserted. After removing the incarcerated portion of the small bowel from the abdominal wall, it was evaluated for viability and the colour and warmth of the segment was rapidly restored. There was also good movement of the bowel muscles of the incarcerated segment. It was deemed viable and bowel resection was not performed. The peritoneal defect was repaired.

Unfortunately, her condition deteriorated postoperatively and she died 2 days after her second operation.

**Discussion**

Intra-peritoneal drains continue to be used in abdominal surgery. Although there are advantages to using drains (prevention of intra-abdominal fluid accumulation, early detection of bleeding or anastomotic leaks) [1], we must always consider the possible complications (secondary infection, intestinal perforation, haemorrhage, drain site hernias and adhesions) of such drains and be aware of these complications in the postoperative period. [2-4] These complications could lead to increase in morbidity and mortality after abdominal operations. [5, 6, 8]

Herniation at the site of an abdominal drain is rarely seen [4-10] and can be difficult to diagnose.7] Such hernias that protrude from the skin site (evisceration) are more easily detected and diagnosed but small hernias that protrude only through the peritoneum and do not reach the skin

can be difficult to suspect, hence difficult to diagnose. Such cases are very rare. [7] Most cases of drain site hernias involve drains of external diameter larger than 10mm. [5, 6, 8] Reported cases commonly involve the small bowel [5, 6, 8-10] or appendix. [11, 12]

There have been several recommendations to try to prevent herniation through a drain site. These include a small stab incision through the skin and aponeurotic layers, stretching the peritoneum to insert the drain obliquely [8], using drains measuring less than 10 mm in external diameter [11] and using a purse-string suture for closure of the defect after the drain is removed and using soft rubber or latex wick drains (Penrose drains) [6]. However, there is no conclusive evidence on the effectiveness of these methods in preventing or decreasing the rate of drain site hernias. Some meta-analysis studies have revealed that the indications of prophylactic drains should be minimized in cases of non-complicated operations such as laparoscopic or open cholecystectomy, gastric and gynaecologic surgery. [13, 14, 15] In our case, a 12mm skin incision was made and the peritoneum was stretched as the drain was inserted.

**Conclusion**

Careful consideration should be given before deciding to insert an abdominal drain. Lack of definitive evidence on the usefulness of abdominal drains has not helped the resolution of this issue which remains controversial. [16] Some authors question the indications and effectiveness of drains for abdominal surgery and do not recommend their routine use. [13, 16] If it is decided to use an abdominal drain, careful postoperative consideration and management is recommended for early diagnosis of potential complications which would have effect on morbidity and mortality.

**Learning points:**

1. It is important to know the possible complications of intra-abdominal drains.

2. Early diagnosis of use of intra-abdominal drains is important.

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## Authors' contributions

*Meric Kutlay*: Conceived the study and carried out the literature search and prepared the draft manuscript.

*Anna Biondo*: Participated in literature search and design of the final manuscript.

*Julian Coker*: Participated in design and edited the final manuscript.

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