

# Iatrogenic Bowel Perforation Secondary To Surgical Drain After Cholecystectomy: A Case Report With Review Of Literature

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## Abstract

Intraperitoneal drains after cholecystectomy are indicated only if the surgeon is concerned about identifying or controlling a possible bile leak and/or haemorrhage. In spite of infrequency, complications secondary to placement of these surgical drains occur. Herein we report a case of iatrogenic jejunal perforation caused by soft rubber tube drain, reinserted after accidental pull-out, in a 29-year-old female who underwent an open cholecystectomy for gallstones. The patient was successfully managed by primary repair of the perforated jejunum. The possibility of bowel injury should be kept in mind when draining the abdominal cavity after surgery. In any case, blind insertion or reinsertion of the intraperitoneal drain must be discouraged in order to avoid inadvertent injury to the vital organs. Our review of literature revealed twelve cases of bowel perforations occurring due to a drainage system; six to closed suction drains, and six to open drainage tubes.

## INTRODUCTION

Drains are frequently placed in the abdominal cavity to prevent the collection of fluid or blood following surgery but the occurrence of bowel perforation secondary to the placement of a drain is extremely rare. We report a case of iatrogenic bowel perforation in a 29-year-old female who underwent an open cholecystectomy for gallstones, due to reinsertion of an intraperitoneal drain after its accidental pull-out.

## CASE REPORT

A 29-year-old female was admitted elsewhere with complaints of colicky, non-radiating pain in the right hypochondrium associated with nausea and vomiting for the last three years. Ultrasonography showed multiple stones in the gallbladder with normal common bile duct and intrahepatic ducts. She underwent open cholecystectomy with placement of a soft rubber tube drain through separate stab incision to drain the gallbladder fossa. Operative details showed no intraoperative complications.

Postoperatively, she responded well and oral liquid diet was allowed after 24 hours. Approximately 300 mL of sero-sanguinous discharge were collected in the first 24 hours, which was reduced to 50 mL after 3 days. The drain came out accidentally on the 4th day during walking for which

nothing was done and the drain site was dressed with sterile gauze. Postoperatively, on day 5, she developed high-grade fever with pain in the right side of the upper abdomen. The dressing was changed from time to time because of copious discharge and the patient was put on antibiotics, analgesics and other supportive treatment. Ultrasonography of the abdomen also revealed a collection of mixed echogenic fluid in the subhepatic area.

On day 6, the drain was again placed through the same site under anaesthesia; it drained about 600 mL per day, with improvement in the condition of the patient. On the 9th postoperative day, small bowel contents were apparent in the drainage fluid. The patient was then referred to this hospital.

The patient showed no signs of peritonitis. Blood profile revealed a hemoglobin level of 10.2 gm%. The total white blood cell count was 9700/cumm with polymorphonuclear leukocytosis (88%). Other routine blood investigations, urine analysis and serum chemistry were found to be normal.

Ultrasonography of the abdomen revealed a minimal fluid collection in the gallbladder fossa. A fistulogram through the drain revealed that the tip of the drain had entered the jejunal lumen through a perforation (Figure 1).

**Figure 1**

Figure 1: Fistulogram through the rubber tube drain (D) shows a perforation of the jejunum.



**MANAGEMENT**

Conservative management was continued for five days to improve the general condition of the patient. Drain output was 500-600 mL per day. On exploration of the abdomen, a loop of the jejunum containing the rubber tube drain was found to be adhered to the site of the drainage tube. There was no evidence of intraperitoneal spillage of the bowel contents and collection of fluid or pus. The loop of the jejunum was separated from the abdominal wall and found healthy. Primary repair of the perforated jejunum with 2/0 silk suture was done. The abdomen was closed in layers. The patient had an uneventful recovery.

**DISCUSSION**

Bowel perforation secondary to drainage systems following abdominal surgery is a rare condition.[1] Review of literature revealed twelve cases of bowel perforations occurring due to a drainage system; six to closed suction drains,[2,3,4] and six to open drainage tubes.[1,5,6] The mechanism of bowel injury caused by suction and open drains differs in that suction

drains can draw the bowel wall in the side holes [2,3] whereas open drains may cause perforation owing to pressure necrosis by the tip of the drain.[1,5] It was proposed that the long-term placement of drains might be the main contributory factor responsible for pressure necrosis of the bowel wall.[5] In our case, the bowel was perforated due to direct thrust of the drain during reinsertion through the same site where it might be already adhered. This was confirmed on exploration when perforated jejunum was found adhered to the abdominal wall at the drain site and the drainage tube was inside the jejunal lumen. Review of the literature suggests that conservative management may be appropriate for patients without any signs of generalized peritonitis, whereas repeat laparotomy is required for those with generalized peritonitis.[5] In our case, though signs of generalized peritonitis were not evident, the constant large amount of drainage and the suggestive fistulogram compelled us to re-exploration.

In conclusion, to avoid such a complication, blind insertion or reinsertion of an intraperitoneal drain must be discouraged in order to avoid inadvertent injury to the vital organs and the possibility of bowel injury should always be kept in mind when draining the abdominal cavity after any type of surgery.

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