

Strangulated Internal Hernia Through Falciform Ligament: A Rare Cause of Small Bowel Obstruction

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ABSTRACT

Internal hernia through the falciform ligament is exceedingly rare. Preoperative diagnosis is extremely difficult, therefore high index of suspicion is required. We report a case of 72 year old male who presented with discomfort in upper abdomen and episodic bilious vomiting. He later developed severe excruciating abdominal pain with generalized guarding. Exploratory laparotomy revealed strangulated internal hernia through the falciform ligament.

Key words Strangulated hernia, Internal hernia, Falciform ligament.

INTRODUCTION:

The incidence of internal hernias is reported as 0.2% to 2% and only a proportion of that causes small bowel obstruction. The types of internal hernias and their relative incidences are as follows: paraduodenal 53%, pericecal 13%, foramen of Winslow 8%, transmesenteric 8%, etc.¹ The incidence of internal hernia through a defect in the falciform ligament is estimated as 0.2%, with an even lower figure caused by congenital anomaly.² A literature search from 1948 to 2010 showed only 14 case reports of small bowel obstruction caused by internal hernia through defect in the falciform ligament.^{3,4} Herein we report one such case managed at our department.

CASE REPORT:

A 72 year old male presented to emergency department with five days history of central abdominal pain and episodic vomiting. He earlier visited another clinic but his symptoms did not improve. He also developed constipation and abdominal distention. He was a diagnosed case of Hepatitis C. On examination his pulse was 110 beats/ minutes, blood pressure 105/70 mmHg and temperature 99.9°F. He had pallor but was not jaundiced. Breath sounds were decreased in right hemithorax at base. Abdomen was distended with slit like umbilicus. There was generalized guarding and tenderness and bowel sounds were absent. Rectum was empty on digital examination. His biochemical profile revealed

hemoglobin of 7.5g/dl, total leucocyte count of $11 \times 10^3/\mu\text{L}$, PT 20/13 and APTT 38/34. X ray chest revealed mild right sided pleural effusion. X ray abdomen showed dilated small gut loops with multiple air fluid levels. Ultrasound abdomen revealed moderate amount of free fluid in abdomen and pelvis. On diagnostic aspiration hemorrhagic fluid was obtained. Emergency exploratory laparotomy was thus planned.

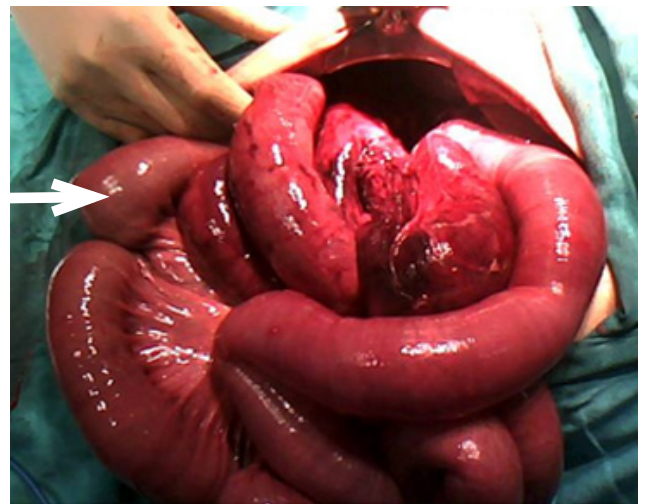


Figure I: Gangrenous loops of small gut herniating through the defect in falciform ligament.

Abdominal exploration revealed 700 ml of hemorrhagic fluid and gangrenous loops of ileum, herniating through a defect in the falciform ligament (Fig I). Prolonged strangulation had resulted in massive necrosis of the tissues (Fig II). Falciform ligament was divided to release the strangulated bowel. Resection of the gangrenous part of the ileum followed by primary anastomosis was done. Patient

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had unremarkable recovery and was discharged on sixth postoperative day.

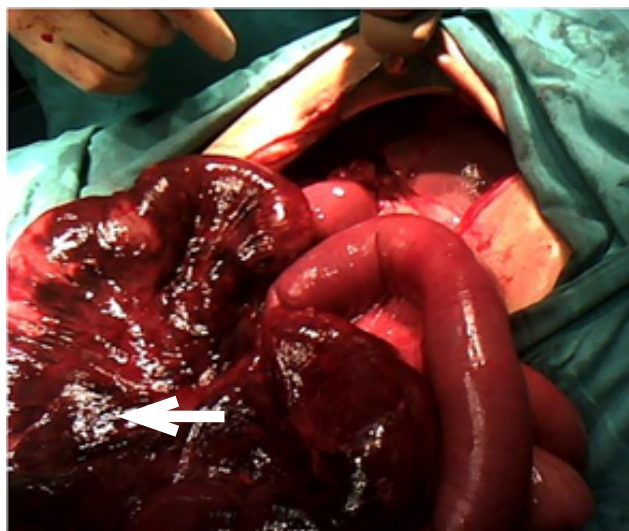


Fig II: Strangulated bowel released after division of falciform ligament.

DISCUSSION:

Hernia through the falciform ligament is a rare type of internal hernia in which protrusion of an intraabdominal viscus occurs through or into a defect of the falciform ligament of liver. The first reported case of falciform ligament hernia was described by Schultz and Ziegler in 1937. The patient was a female neonate who at laparotomy had a 12 cm of herniated small bowel.² The falciform defect varies and may appear as a window or discrete aperture to a guy rope or complete absence with the ligamentum teres acting as a constricting band. The herniated viscus is most commonly small bowel, however large bowel and omentum have also been reported. The clinical symptoms may range from intermittent mild digestive complaints to acute onset of incarceration as occurred in our patient.⁵

The etiology of defects in the falciform ligament is diverse and includes congenital anomalies, trauma, inflammation, and iatrogenic causes. The falciform ligament develops from the septum between the liver and anterior abdominal wall. Hypoplasia of the falciform ligament gives rise to the noted defect during development. Few reports in the literature reported these internal hernias occurring after laparoscopic surgery, with defects in the falciform ligament made during insertion of the port cannula.^{5,6} Internal hernias are more often reported in early childhood or late pregnancy. In late pregnancy, the gravid uterus enlarges, pressing the small bowel into the upper abdomen, allowing relatively easy passage through congenital falciform ligament defects.⁷ In our patient the defect was discrete but

there was no history of previous surgery, we therefore assume this to be a case of congenital defect allowing for spontaneous herniation of bowel loops.

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