

Small Bowel Perforation Due To Blunt Abdominal Trauma Associated With Right Inguinal Hernia: Report of a case

V Lyutskanov, M Kondarev, G Markov, G Kondarev

Citation

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Abstract

Inguinal hernias are common surgical pathologies with well known complications. Bowel perforation resulting from abdominal trauma in association with inguinal hernia is a rare complication. We report a case with three years follow-up of a patient with right inguinal hernia and small bowel perforation due to mild abdominal trauma, treated by laparotomy, suture of the intestinal perforation and one-stage transabdominal hernioplasty.

INTRODUCTION

Inguinal hernias are common surgical pathologies with well known complications. While accretion, inflammation, strangulation and incarceration are emphasized considerably, the role of hernias by abdominal trauma is barely discussed. Bowel perforation resulting from this kind of trauma is a rare complication and only few reports are present in the literature.

We report a case with three years follow-up of a patient with right inguinal hernia and small bowel perforation due to mild abdominal trauma, treated by laparotomy, suture of the intestinal perforation and transabdominal hernioplasty.

CASE REPORT

A 79-year-old male with a one-year history of a right inguinal hernia was listed for elective hernioplasty. Before the planned admission, he slipped and fell down on his abdomen. Emergency hospitalization was undertaken. According to his medical records the hernia was relatively large and reducible. At admission, he had mild abdominal pain and a normal abdominal examination. The laboratory tests were within the standard range. Ultrasound examination and plain abdominal X-ray revealed no pathologic findings. Four hours later, the patient complained of worsening abdominal pain. Abdominal tenderness and rebound were observed during the reexamination. Ultrasonography revealed free fluid in the cavum Douglasi. An emergency midline laparotomy was performed. Peritonitis with 300ml of pus and fibrinous deposits in the pelvic space were observed. The cause was a 1cm-long rupture of the ileum

near to the mesentery (Fig. 1). The rest of the ileum was vital and obviously normal. Aspiration of pus and lavage of the abdominal cavity were performed. The bowel defect was closed with a two-layer suture. The internal inguinal ring was sutured through the peritoneal cavity. The patient's recovery was uneventful. There is no recurrence of the hernia three years later.

Figure 1

Figure 1: Rupture of the ileum



DISCUSSION

The association between small bowel rupture and blunt abdominal trauma in the presence of an inguinal hernia is not commonly discussed in surgical literature. Most authors [1,2,3,4,5,6,7,8,9,10,11,12,14,15] report one or two cases; the largest series of nine patients comes from Payson and Mage [13]. O'Leary and MacGregor [11] presented 104 cases by review

of the literature. This complication is more common in elderly men and right-sided inguinal hernias [11]. A detailed description of the pathogenesis was made by Payson and Mage [13]. They proposed 3 possible ways that lead to intestinal injury: pressure at the internal inguinal ring (sac empty), pressure within the sac and rupture due to shearing of an irreducible hernia. The authors pointed out the important role of an inguinal hernia in bowel rupture by blunt abdominal trauma due to the resulting pressure gradients. We suggest the same action in our case, because the trauma was mild and associated with a sudden increase in intraabdominal pressure. Intestinal perforations caused by such a mechanism have been reported more frequently [1,4,5,7,8,9,10,11,13,14] than perforations caused by direct blunt trauma to the inguinal hernia [2,3,6,12,15]. Reynolds [6] introduced additional mechanism of injury: direct trauma to an inguinal hernia compresses the incoming and outgoing loops of herniated bowel, forming a sealed loop. The generated intraluminal pressure leads to perforation of bowel within the sac.

The clinical course is determined by the extent and duration of peritoneal contamination. The signs of peritonitis are leading, but in the beginning the clinical picture is unspecific. X-ray and CT may reveal free intraabdominal gas; CT is more sensitive [4,16]. In our case, X-ray was negative and we used ultrasound to detect free fluid in the abdominal cavity, which was positive 4 hours later.

Early laparoscopy is a valuable method of diagnosis and management of acute abdomen [17,18]. Nussbaumer et al. [3] reported a successful one-stage laparoscopic repair of hernia and intestinal perforation.

Treatment of peritonitis is the main goal – evacuation of the exsudate, lavage and drainage of the peritoneal cavity, achieved by laparotomy in all but one of the explored publications [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15]. The dilemma is whether to perform hernia repair in the same stage or not. Some authors [2,5,7] preferred a delayed hernia repair for their patients, whereas others [3,8,13] performed hernia repair at the same stage. We used closure of the hernia defect from within at one stage considering the following arguments: simple, no time consuming procedure, no use of prosthetic material and no need for additional operation, especially in elderly patients.

This case illustrates the rare and unfortunate risk of leaving an inguinal hernia unrepaired and points out the necessity to

promote elective hernia repair.

ADDRESS FOR CORRESPONDENCE

Veselin Lyutskanov Medical Institute - Ministry of Interior,
Clinic of Surgery Skobelev blv. 79 Sofia 1606 Bulgaria E-mail: vesol@mail.bg Tel: +359 888 643 153

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Author Information

Veselin Lyutskanov, M.D., Ph.D.

Medical Institute - Ministry of Interior, Clinic of Surgery

Mincho Kondarev, M.D.

Medical Institute - Ministry of Interior, Clinic of Surgery

Georgi Markov, M.D., Ph.D.

Medical Institute - Ministry of Interior, Clinic of Surgery

Gencho Kondarev, M.D., Ph.D.

Assos. Prof., Medical Institute - Ministry of Interior, Clinic of Surgery