Strangulated Richter's Umbilical Hernia - A Case Report

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Abstract Richter's hernia is an abdominal hernia in which part of the circumference of bowel entrapped in the hernial sac. The segment of the entrapped bowel is nearly always the distal ileum but any part of gastrointestinal tract from the stomach to the colon may become incarcerated. The most common sites for Richter's hernia are the femoral ring (71%), deep inguinal ring (23%) and ventral or umbilical hernias (6%). The growing popularity of laparoscopic surgery has led to a new possible site for development of Richter's hernia. In most cases as less than two thirds of the circumference of the bowel wall is involved, the lumen of the gut remains free and thus features of intestinal obstruction are often absent. Richter's hernia is a deceptive entity whose high death rate can be reduced by accurate diagnosis and early surgery. We report a case of strangulated Richter's umbilical hernia in a 36 years old male.

Keywords Richter's umbilical hernia · Strangulated

Introduction

The earliest case of Richter's hernia was reported by Fabricius Hildanus in 1598 [1]. The first scientific description of this particular hernia was given by August Gottlob Richter in 1778 who presented it as "the small rupture". Sir Fredrick Treves gave an excellent over view on the topic

and proposed the title "Richter's hernia". The dramatic increase in the use of laparoscopic surgery, creating a new site for development of Richter's hernia has lead to increase in the incidence [1]. The classic feature of Richter's hernia is entrapment of part of the bowel circumference in the hernial sac. The involved segment may rapidly progress into gangrene but signs of intestinal obstruction are often absent. Normally patient with Richter's hernia are above the age of 60 years but cases have been reported even in infants [7]. We report a case of strangulated Richter's umbilical hernia in a 36 years old male.

Case Report

A 36 years old male presented to the emergency department with history of swelling and pain in the region of umbilicus of 3 days duration following a bout of violent cough.. There was history of reddish discolouration of the skin around the umbilicus associated with fever of one day duration There was no history of abdominal distension, vomiting and constipation features suggestive of intestinal obstruction. On general physical examination patient was febrile. Examination of the abdomen revealed 2×2 cm tender swelling in the region of the umbilicus. Skin over the swelling and around the umbilicus was erythematous (Fig. 1). There was no cough impulse over the swelling. There was no other abnormality detected on abdominal examination. Ultrasonography of the abdomen revealed defect measuring 16 mm in the anterior parietal wall in the region of the umbilicus with herniated bowel.

After relevant investigation patient was taken to operation theatre for emergency surgery. On exploration it was

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Fig. 1 Clinical photograph showing swelling in the region of the umbilicus with erythema of the surrounding skin

found that two thirds of circumference of small bowel was entrapped in the umbilical hernial sac and was gangrenous (Fig. 2). Resection of the gangrenous small bowel segment and end to end anastomosis was done. Herniorrhaphy (Mayo's repair) was done to close the umbilical hernial defect. Post operative period was uneventful. Sutures were removed on the 10th post operative day. After 3 months of follow up patient was asymptomatic.

Discussion

Richter's hernia is defined as an abdominal hernia in which only part of the circumference of the bowel is entrapped in the hernial sac [1]. The segment of the entrapped bowel is nearly always lower portion of the ileum [2] but any part of the gastrointestinal tract from the stomach [3] to the colon including even the appendix [4] may become incarcerated. The most common sites for Richter's hernia are the femoral ring (71%), deep inguinal ring (23%) and ventral or umbilical hernias (6%). Rarely Richter's hernia have been found in lumbar triangle, obturator canal and in incisional hernia [5].

Making the diagnosis of Richter's hernia may be difficult because of the apparently innocuous initial symptoms and sparse clinical findings. The diagnosis may remain presumptive until clearly confirmed at surgery. The first mild symptoms such as vague abdominal pain and slight malaise may not be appreciated resulting in delayed diagnosis. There may be nausea and vomiting but they are on the whole less common and less severe than in the usual form of strangulation. The most constant physical finding is tenderness or a swelling over a potential hernial orifice [1]. Overlying erythema should heighten the suspicion of

Richter's hernia. If local gangrene of the intestinal wall occurs the classic signs of inflammation appear. If surgery performed too late or not at all, may lead to perforation resulting in local abscess, subcutaneous emphysema and enterocutaneous fistula. In addition to patient's history and careful physical examination, ultrasonography and computerized tomography may be helpful in establishing the diagnosis [8].

Strangulated Richter's hernia demands emergency surgery. The main goal in these patients should be to reduce the systemic toxin load from the gangrenous herniated tissue [1]. If the typical coin lesion of a bowel wall is nonviable but not yet perforated, has not affected more than 50% of the circumference and not extended to the mesenteric border Horbach recommends an invagination procedure without opening the intestine, ie gangrenous area is invaginated and margins are sutured together [6]. If nonviable bowel wall is more than the 50% of the circumference and if it extends into the mesenteric border then resection of the gangrenous segment and anastomoses is required. Repair of the hernial orifice should never be omitted if recurrence of Richter's hernia is to be avoided.

Conclusion

Richter's hernia is a deceptive entity whose high death rate can be reduced by accurate diagnosis and early surgery. Considering the growing popularity of laparoscopic surgery with a new possible site for development of Richter's hernia at laparoscope insertion sites, awareness of this

Fig. 2 Operative photograph showing gangrenous area of small bowel involving two thirds of circumference

special type of hernia with its misleading clinical features is important.

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