CASE REPORT

Strangulated inguinal hernia of Richter's type: a case report and review of literature

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Introduction

Richter's hernia is an abdominal hernia hallmarked by entrapment and strangulation of only part of the circumference of bowel at the hernial orifice [1]. It can involve any part of the bowel from stomach to colon, appendix, but almost always includes the distal ileum [2]. Anatomically it is facilitated by a small enough, yet firm hernial orifice that acts as a constricting ring, to allow only part of the bowel to be snared.

It can occur in any usual hernia site but commonly occurs in the femoral and inguinal canals [3]. It was first described in 1606 by Fabricius Hildanaus, but in 1785 August Gottlob Richter gave the first comprehensive description of it and called it "the small ruptures" [4].

Case Report

A 54-year-old previously well man presented to the emergency ward with a symptomatic right inguinal hernia of 3 days' duration. He complained of progressively worsening pain in the right inguinal region associated with nausea and non-bilious vomiting. He also complained of mild abdominal distension without constipation.

On examination, he was afebrile, dehydrated and tachycardic with normal blood pressure. Abdominal examination revealed mild abdominal distension with a non-tender, irreducible right inguinal hernia without overlying erythema.

He was managed initially with analgesics, fluid replacement and planned for early surgery. However, there was worsening inguinal pain with evidence of small bowel dilatation in subsequent abdominal radiographs and ultrasonography. As a result, strangulation was suspected and emergency surgery was done.

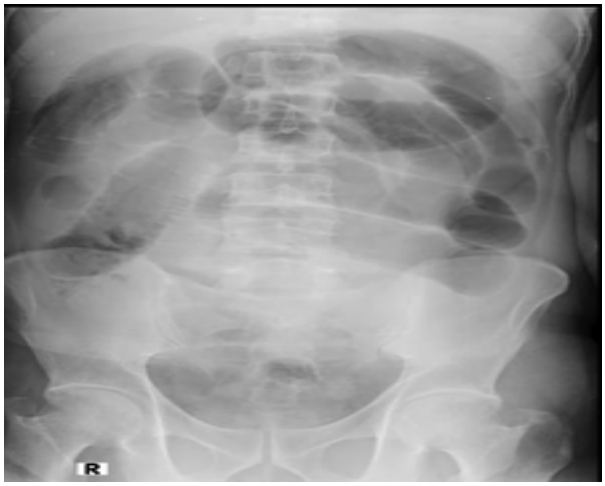

Figure 1. Supine abdominal radiograph showing evidence of small bowel dilatation

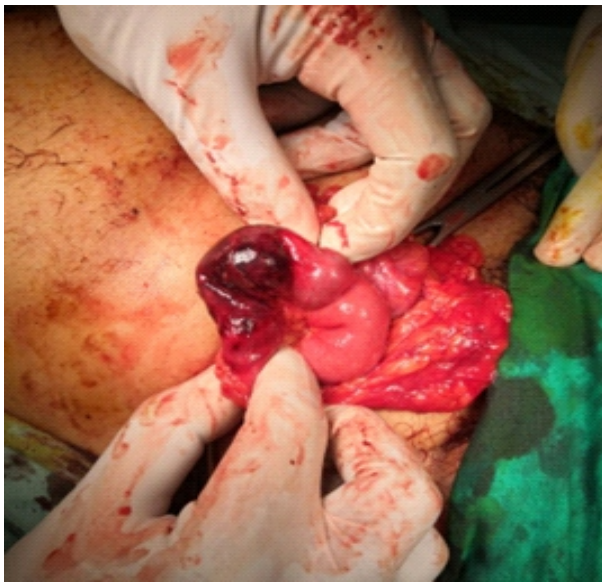

Figure 2. The diaphragmatic defect aftter reduction of hernia defects (White arrow)

Inguinal exploration revealed evidence of a Richter's hernia with gangrene of more than 2/3rd of the wall of the herniated distal ileum. The segment of necrosed bowel was excised and side to side ileal anastomosis with a mesh repair was performed as there was no evidence of perforation or

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peritoneal contamination. The patient made an uneventful recovery and was discharged on the 4th post-operative day.

Discussion

Richter's hernia is a lesser known, rare type of hernia characterized by herniation of the antimesenteric portion of the bowel through a small yet firm fascial defect [3]. Its incidence has recently increased with the advent of minimally invasive surgery. The commonest locations are the femoral canal (36-88%), inguinal canal (12-36%) and abdominal wall incisional hernias (4-25%). It commonly occurs between the ages of 60-80 years. However, it has been described even in the paediatric populations [1,4].

It was first reported by Fabricius Hildenaus in 1598, followed by a few reports by Alexis Littre in 1700, but Richter formally described it as a "partial enterocoele" in 1785 [3].

The fascial defect is large enough for a part of the bowel wall to herniate through, but not so large as to accommodate its entire circumference. Its tightness leads to strangulation, with oedema, venous congestion, and haemorrhagic infarction with segmental gangrene. It commonly involves less than 2/3rd of the bowel wall, hence causes strangulation without obstruction. Complete obstruction is seen only in 11% of Richter's hernias.

Owing to its anatomy and pathophysiology, diagnosis of Richter's hernia maybe difficult because of the apparently nonspecific initial findings [6]. Patients commonly present with features of an incarcerated hernia, abdominal discomfort, distention, nausea and vomiting. Localised tenderness and swelling over a hernial orifice has been described as the most constant finding while overlying skin erythema should raise clinical suspicion of strangulation. Due to the lack of complete obstruction in most cases, patients present late when symptoms intensify, further along in the strangulation process. Radiological signs of ileus may be seen in 10% [1].

Depending on the location of the hernia and degree of entrapment, the clinical presentation and response may vary considerably and has been divided into 4 main groups. The obstructive group has clinical features of intestinal obstruction resulting in early diagnosis, therapy and henceforth an excellent prognosis. However, the danger group with vague nonspecific symptoms leads to a delayed diagnosis and high rates of complications and even death. The post-necrotic group with localized strangulation and perforation may present with the development of an enterocutaneous fistula. However, perforation with a post-necrotic abscess may find its way to another compartment leading to peritonitis and even septic shock. [1,7]

The mainstay of management of Richter's hernia is surgery. The surgical approach will vary depending on the location of the hernia, clinical status, surgeon's preference etc. Minimally invasive surgery may pose difficulties in safe access due to dilated bowel loops and cardiorespiratory effects of creation of the pneumoperitoneum.

Regardless of the approach, assessment of bowel viability is crucial. The bowel may be assessed for its colour and peristalsis but it does not correlate with viability. Use of standard and modern methods such as intravenous fluorescein and Wood's lamp or intravenous indocyanine green and infrared angiography or assessment of arterial flow using Doppler is preferred. Questionable bowel must be resected and anastamosed [3].

In a Richter's hernia in which strangulated bowel has been resected and anastomosed, placement of a mesh is controversial and relies on the surgeon's clinical judgement [3].

The above case describes a patient with initially nonspecific symptoms, presenting late with features of an incarcerated hernia. Although managed conservatively initially, worsening intensity of pain and evidence of small bowel dilatation raised clinical suspicion of an obstructed and strangulated hernia. Thus, he was in the danger category with possibly dangerous sequelae had prompt action not been taken. Urgent inguinal exploration revealed a Richter's hernia with gangrene of 2/3rd of the antimesenteric ileal wall. Necrosed segment of ileum was resected and anastamosed and the fascial defect closed with a mesh based on surgical judgement.

Informed consent: Written informed consent was obtained from the patient for publication inclusive of images.

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Learning Points:

- Richter's hernia is a rare type of hernia with grave sequelae if detected late.
- High degree of suspicion and low threshold for urgent surgery must be present for a patient with an incarcerated hernia without obstruction but with symptoms suggestive of strangulation.