CASE REPORT

Richter’s femoral hernia manifested by a progressive ileus

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Summary Richter’s hernia is the protrusion and/or strangulation of part of the intestine’s antimesenteric border through a rigid small defect in the abdominal wall. This hernia is difficult to diagnose because the signs and symptoms of development are innocuous. In most cases, because less than two-thirds of the circumference of the bowel wall is involved, the lumen of the intestine remains free; thus, features of intestinal obstruction are often absent. Here we report a case of strangulated Richter’s femoral hernia in a 72-year-old man who had progressive ileus for 2 months. A literature review indicated that this is the longest history of ileus symptoms reported to date.

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1. Introduction

The earliest case of Richter’s hernia was reported by Fabricius Hildanus in 1598, and the first scientific description of this hernia was provided by August Gottlob Richter in 1778.1 In 1897, Sir Frederick Treves defined this condition as strangulation of only a part of the circumference of the intestine and accurately delineated the natural course of the hernia: “The involved segment may rapidly progress into gangrene while the bowel lumen remains patent.”2

The initial symptoms of Richter’s hernia may be mild, but they may become exacerbated over a short duration. Symptoms can be systemic (fever and malaise), abdominal (cramping, intense pain, nausea, vomiting, and abdominal swelling), or localized (painful mass in the groin). In some untreated cases, an abscess may form without communication with the peritoneal cavity and may develop into an enterocutaneous fistula if it ruptures.

The segment of the entrapped bowel is nearly always the distal ileum, although any part of the gastrointestinal tract from the stomach to the colon may become incarcerated. The involved segment may rapidly progress to gangrene, although signs of intestinal obstruction are often absent.1 The tendency for early strangulation and the

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common lack of obstructive symptoms may lead to delayed
diagnosis and sometimes misdiagnosis, partly explaining the
high mortality (20–60%) associated with Richter’s hernia. 

A potential pitfall in the diagnosis of Richter’s hernia is
incomplete intestinal obstruction with mild equivocal
symptoms. Here, we report the case of a 72-year-old man
who had a long duration of ileus with gradual progression.
Initially, he presented only with symptoms of malaise and
abdominal bloating. No painful mass in the groin was
observed. Until he was hospitalized 2 months later, small
bowel obstruction resulting from a right groin hernia was
suspected on the basis of an abdominal computed tomog-
raphy (CT) scan. An emergency operation was performed,
and the final diagnosis was strangulated Richter’s femoral
hernia. This paper reports this rare case of 2-month-long
progressive ileus and presents a literature review.

2. Case report

A 72-year-old male patient experienced intermittent
abdominal fullness with gradual aggravation for 2 months.
He was also unable to keep food down. Thus, he visited the
local clinic, where upper gastrointestinal endoscopy
revealed a duodenal ulcer. He was referred to our emer-
gency department because of the possibility of progressive
ileus. He presented with vomiting and the absence of pas-
sage of flatus and feces for 3 days. The patient had no
history of systemic diseases and had not undergone any
surgery. Upon general physical examination, mild tachy-
cardia was noted (pulse rate, 108 beats/minute). Abdom-
inal examination revealed distension and mild epigastric
tenderness. However, no palpable lump in the right inguinal
region was observed. Laboratory analysis revealed
leukocytosis with a left shift (white blood cells, 15,150/
m3; segmented neutrophils, 90%). A standing abdominal
radiograph showed small bowel distension with multiple
air-fluid levels (Fig. 1). A contrast-enhanced CT of the
abdomen revealed small bowel obstruction caused by a
right inguinal hernia (Fig. 2).

Intraoperatively, an incarcerated femoral hernia with
normal-appearing inguinal canal structures was observed
(Fig. 3). The antimesenteric wall of the distal ileum was
within the hernial sac (Fig. 4), and the incarcerated bowel
was gangrenous (Fig. 5). The patient was diagnosed with
strangulated Richter’s femoral hernia, and segmental
bowel resection was performed. The femoral defect was
treated by suturing the inguinal ligament to Cooper’s liga-
ment by using strong nonabsorbable sutures. The patient
made an uneventful recovery and was discharged on post-
operative Day 11. No recurrence occurred during 14 months
of follow up.

Figure 1  Dilated loops of small bowel with multiple air—fluid
levels but no free intraperitoneal air.

Figure 2  The hernial sac (arrow) was located lateral to the
pubic tubercle.

Figure 3  The hernial sac was found at the femoral orifice.
Richter’s hernia, by definition, is a firm, small fascia defect. This orifice must be large enough to entrap the bowel wall but small enough to prevent protrusion from an entire loop. The symptoms and clinical course vary widely depending on the degree of obstruction, which is related to the extent of bowel circumference involved. The initial mild symptoms, such as vague abdominal pain and malaise, may not be immediately evident, resulting in delayed diagnosis. Nausea and vomiting may be present, although they are less common and less severe than strangulation, which is usually observed because obstruction is rarely complete. Traditionally, clinical and radiological signs of ileus are present in approximately 10% of the patients; in the absence of complete mechanical obstruction, the symptoms might be due to paralytic ileus following an ischemic change in the incarcerated part of the bowel wall. Generally, patients with strangulation present with a painful mass, nausea, vomiting, abdominal distension, fever, and leukocytosis.

The insidiousness of its presentation and the fact that patients may maintain bowel transit usually delay the diagnosis of Richter’s hernia. The time span from the onset of symptoms to operation is called preoperative delay. An increase in the delay increases the risk of ischemia and necrosis of the incarcerated tissue, thus increasing the need for intestinal resection, which is associated with high morbidity and mortality rates. Steinke and Zellweger reported a series of 18 patients with strangulated Richter’s hernia at Lopiding Hospital in northern Kenya who experienced preoperative delay. Sixteen of the patients had perforated Richter’s hernias. Of these patients, 11 had an enterocutaneous fistula in the groin, one had a perforation of the labia majora, and four had a postnecrotic abscess (along with signs of septic shock). The timespan from the onset of these symptoms to hospital admission ranged from 5 days to 1 year (one patient had an enterocutaneous fistula for 1 year). Two of the 18 patients (11%) had intestinal obstruction for 6 days and 12 days. In Taiwan, Mou et al reported on six patients with Richter’s groin hernia. Of these patients, four had a groin mass or tenderness, five patients had ileus, and only one patient had intestinal obstruction. Because of the absence of obvious symptoms of intestinal obstruction, the operations were delayed in each instance from 0.5 days to 3 days. In summary, a total of 24 patients with Richter’s groin hernia were reviewed in these two studies. Five of the 24 patients had ileus with preoperative delays ranging from 0.5 days to 3 days (mean, 1.5 days) and three patients had intestinal obstruction with preoperative delays ranging from 3 days to 12 days (mean, 7 days). The other 16 patients had perforated Richter’s hernia with an enterocutaneous fistula or postnecrotic abscess; their preoperative delays ranged from 5 days to 365 days, with a mean of 58.1 days and a median of 30 days. The duration of preoperative delay increased in the order of ileus, intestinal obstruction, and enterocutaneous fistula/postnecrotic abscess. With an increase in the preoperative delay, the rate of perforation of Richter’s hernia increased. Our patient had no history of abdominal operations. Initially, he experienced intermittent bloating and mild malaise. The lack of obstruction symptoms and local signs
resulted in the aforementioned diagnostic pitfall. The symptoms of ileus persisted for approximately 2 months and gradually worsened. Fortunately, ileus did not progress to perforation. We believe that our case is rare because we could not identify any case for which the duration of ileus was longer in the literature.

In the diagnosis of Richter’s hernia, initial symptoms can be silent or nonspecific and focal signs may be lacking. When diagnostic uncertainty persists after physical examination, imaging studies may be required. Various imaging modalities, including conventional radiography, ultrasonography (US), and CT can be used. Conventional radiography detects signs of mechanical ileus with bowel loop distension, thickening of intestinal folds, and air–fluid levels. US is noninvasive, enables comparison with the asymptomatic side, and can be performed in physiological positions with dynamic scanning. Thus, US plays a crucial role in evaluating the presence of complications such as strangulation or incarceration, and in some cases, US may detect further pathology in the hernial sac. Among radiological techniques, CT is more favorable than the others, providing an accurate and panoramic view of the abdomen. CT is particularly effective in diagnosing abdominal wall hernias because it enables accurate identification of a hernia and its contents, differentiation from other abdominal masses, and the identification of hernia complications (bowel obstruction, ischemia, gas gangrene, and abscesses).

Manual reduction attempts should be avoided prior to directly inspecting and evaluating the viability of the intestine. Early operative intervention is central to the successful management of Richter’s hernia. The type of surgical incision varies according to the location of Richter’s hernia. For Richter’s groin hernia, the favored location is the preperitoneal space. This approach affords the surgeon excellent access to repair the hernial defect and to inspect the bowel through one incision. In cases involving excessive inflammation and necrosis of the body wall hosting the hernia, a two-stage approach, whereby the abscess is initially drained and the hernia is subsequently repaired when the infection is controlled, can be applied.

In conclusion, the high death rate associated with Richter’s hernia can be lowered through accurate diagnosis and early surgery. Thorough investigation of patient history and careful physical examination are required for accurate diagnoses. Radiological imaging can be used to confirm the diagnosis and is highly recommended in cases in which Richter’s hernia is suspected. If left untreated, the bowel wall may become ischemic and gangrenous, leading to rapid clinical deterioration. Thus, if a patient presents with unexplained subacute symptoms and signs of intestinal obstruction, then physicians should consider a diagnosis of Richter’s hernia. Early operative intervention is the mainstay of successful management.

References