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Surgery

RICHTER'S HERNIA: A DECEPTIVE CLINICAL ENTITY PRESENTING AS INTESTINAL OBSTRUCTION.

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ABSTRACT

Introduction: Richter's hernia is a rare entity representing a small percentage of all hernia cases. These are small fascial defects that entrap partial circumference of the bowel and vary in presentation with associated increases in morbidity and mortality.

Case Report: A 78-year male presented with Richter's hernia of the umbilical region which was diagnosed intra-operatively. The content was the ileal wall with pre-gangrenous changes. Because of doubtful viability resection of the segment and end-to-end anastomosis was done. The post-operative period was uneventful.

Discussion: In female and old age patients, Richter's hernia is common with the femoral and inguinal regions being the common sites. The presentation may vary from vague pain abdomen and swelling to gangrene and perforation peritonitis. Some patients present as intestinal obstruction while in some cases the presentation mimics acute gastroenteritis. Radiological investigations like X-ray, ultrasonography (USG), and CT (computed tomography) scan aid in diagnosis but most of the time diagnosis is made intraoperatively. Surgical reduction or resection is often warranted depending on the viability of entrapped segment.

Conclusion: To diagnose and manage this deceptive clinical entity experience and expertise is required. Timely taken decision and intervention helps to reduce morbidity and mortality associated with it.

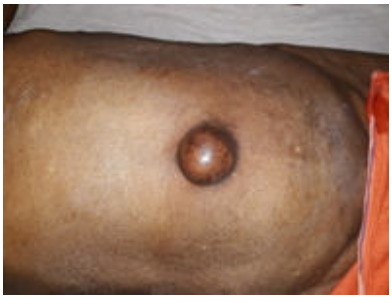
KEYWORDS : Richter's Hernia, Umbilical Hernia, Enterocele, Strangulated Hernia

INTRODUCTION

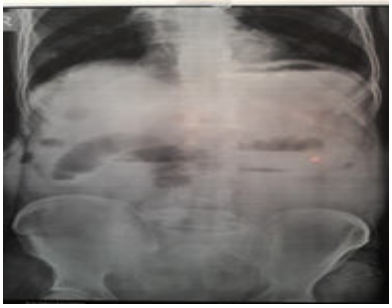
Fabricius Hildanus first reported the case of Richter's hernia in 1598 and this condition was described in detail by August Gottlob Richter in 1778 and in 1887 Sir Frederick Treves suggested the term Richter's hernia. It is defined as the protrusion of part of the circumference of the bowel through a small defect of the abdominal wall resulting in strangulation. Ileum is the usual content in the hernia sac, but stomach to the colon can be entrapped.[1] This type of hernia is rare due to the small percentage of presentation among overall hernia cases. Richter's hernia has an incidence of around 10% among the strangulated hernia.[2] Gangrene occurs more rapidly than other strangulated hernias due to the small size of the defect resulting in a tight constriction ring.[1] Diagnostic delay or misdiagnosis of this condition as intestinal obstruction results in high morbidity or mortality. We present our experience of such a case of Richter's hernia in a 78-year male patient who presented with intestinal obstruction.

CASE REPORT

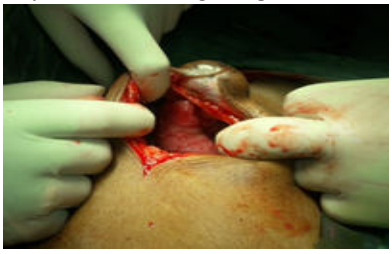
A 78-year-old male who had asymptomatic umbilical swelling for the last 1 year presented to the emergency department with complaints of sudden pain in the umbilical area with irreducible swelling for the past 3 days. It was associated with bilious vomiting and non-passage of flatus and stool. There were no associated co-morbid conditions or any history of trauma or previous surgery. On general examination, there was tachycardia (Pulse rate-106 beats/minute). Abdominal examination revealed a distended abdomen with an ovoid, firm, tender, non-reducible swelling over the umbilical area without cough impulse. The overlying skin was normal. **(Figure 1)** Laboratory investigation revealed raised WBC counts (White blood cells - 13,150/mm^3). Other blood investigation parameters were within normal limits. Erect x-ray of the abdomen shows multiple air-fluid levels. **(Figure 2)** USG showed umbilical hernia with small bowel loop as content along with surrounding septated collection and debris with a defect size was 10 mm. The diagnosis of acute intestinal obstruction with obstructed umbilical hernia was made. The patient was taken for emergency laparotomy under general anaesthesia after obtaining written consent. A midline laparotomy was done which reveal dilated proximal bowel loops and herniated part of the ileal loop through the umbilical defect **(Figure 3)** with entrapment of 50% circumference of the ileal loop. **(Figure 4)** Based on the intra-operative finding a diagnosis of Richter's hernia was made. The bowel segment entrapped was pre-gangrenous which didn't return to normal colour after application of a warm gauge pad and 100% oxygen. So the pre-gangrenous part was excised and end-to-end ileo-ileal anastomosis was done. The patient recovered well in the postoperative period and was discharged on a postoperative day 7.



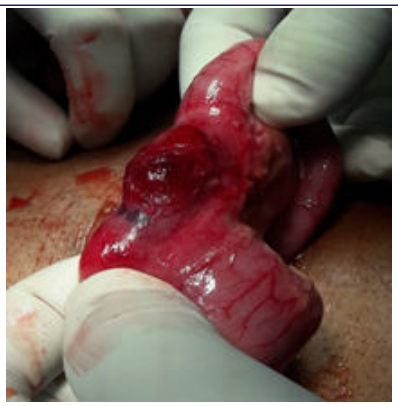
(**Figure 1:** Umbilical Swelling Without Skin Changes)



(**Figure 2:** X-ray Abdomen Showing Multiple Air-fluid Level)



(**Figure 3:** Herniated Ileal Loop Through Umbilical Defect)



(**Figure 4:** Involved Ileal Segment Which Is Less Than 50% Circumference)

DISCUSSION

The presentation of Richter's hernia is highly ambiguous which results in high mortality if prompt diagnosis and treatment are not done.[3] By definition, its fascial defect must be wide enough to trap the part of the bowel wall and not the entire loop.[4] Though it affects elderly patients commonly in their 6th -8th decade of life, but it also has been described in infants. Richter's hernia is seen in female patients commonly as per Treves' series and Kadirov et al. [1,5,6] Frequent sites of occurrence are femoral canal (36-88%) and inguinal ring (12-36%). Through the abdominal wall, it is found in around 4-25% of cases. The increase in laparoscopic surgery is responsible for an increase in the new site of Richter's hernia. Herniation through trocar sites after laparoscopic surgery has been reported in around 0.2-3% of cases.[1,3] Rare sites are umbilical, obturator, Spigelian, sacral foramen, traumatic diaphragmatic hernia of Morgagni, and the triangle of Petit.[1] Around 6% of Richter's hernia results in strangulation and terminal ileum is the usual content.[7]

The clinical course of Richter's hernia will vary according to the degree of obstruction and entrapped bowel segment. Often there is a diagnostic difficulty due to enigmatic symptoms and clinical findings which can include vague pain abdomen and malaise. Less common symptoms like nausea and vomiting may be present which is less drastic than a strangulated hernia. In 10% of cases, ileus is seen clinically and radiologically because of ischemia of entrapped bowel.[4] In many patients, gastrointestinal obstruction symptoms are not seen because of maintenance of bowel patency. Bowel perforation with peritonitis of the abdomen can develop if the hernia is reduced manually which is not advisable.[7] Perforation can involve other compartments like the scrotum, vulva, and thigh.[8] Richter's hernia can also present as erythematous, irreducible painful swelling if gangrene develops. Due to anaerobic infection, subcutaneous emphysema or local abscess can be found.[9,10] The series produced by Steinke et al report enterocutaneous fistula due to preoperative diagnostic delay.[1] Richter's hernia of the femoral ring can be confused with acute lymphadenitis.[3]

Usually, diagnosis is done on the clinical ground but radiological investigations like USG and CT scans can aid in the diagnosis of this condition. Signs of mechanical ileus with dilatation of bowel loops and multiple air-fluid levels can be obtained from conventional radiography. USG provides important information about the entrapped segment and its blood flow and non-pathologic part. CT provides accurate anatomic delineation with the content of sac, hernia complications, and differential diagnosis from other abdominal masses. This aids in preoperative management planning. Most of the time due to the emergency nature of this condition accurate diagnosis is mostly made intraoperatively.[4,7]

For successful management of Richter's hernia, early surgical intervention is warranted. Complications like perforation, strangulation, post-necrotic abscess, and enterocutaneous fistula can be avoided with prompt surgical intervention.[1,3] Early attempts to reduce hernia should be discouraged. In case of viable bowel, reduction of content and repair of defect should suffice. Laparotomy is warranted in perforation peritonitis. Segmental resection to be avoided if less than half the circumference of the gut is involved and the defect should be closed after debridement of margin. In case of strangulation or doubtful viability of more than half circumference segmental resection and anastomosis are required. [1,3] An alternative approach to bowel resection has been proposed by Horbach. If more than 50% of the bowel is nonviable and perforation of the segment has not occurred invagination of the segment without opening bowel had been recommended by him. The necrotic part will de-slough inside the lumen after few days.[1]

In our case, the patient presented with an umbilical hernia and was diagnosed as Richter's hernia intraoperatively which was managed with resection of a segment of bowel and end-to-end anastomosis.

CONCLUSION

Richter's hernia is a deceptive entity with diagnostic uncertainty with vague or unusual clinical presentation. In many cases, it is diagnosed intraoperatively despite the availability of a wide variety of radiological investigations. A high index of suspicion for pre-operative diagnosis is needed and timely surgical intervention can avoid some dreadful complications.

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Author Contribution
Dibyasingh Meher – Data collection and analysis. Writing paper.
Suvendu Sekhar Jena- Writing paper, study concept, and design.
Manas Ranjan Mallick-Study concept and design.

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