



## A rare case of acute abdomen due to strangulated Waldayer's hernia

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### ABSTRACT

**INTRODUCTION:** An internal hernia is the herniation of an intestinal segment into an intra-peritoneal fossa, is an uncommon cause for intestinal obstruction and is difficult to diagnose preoperatively.

**PRESENTATION OF CASE:** We report a male patient 19 years old presenting with acute abdomen due to a strangulated Waldayer's hernia.

**DISCUSSION:** The paraduodenal hernias are more common in males (M:F ratio 3:1). The average age at diagnosis is 38.5 years clinically presenting with chronic intermittent post-parandial abdominal pain. An accurate incidence of paraduodenal hernias in infancy and childhood is unknown, but is quite rare.

**CONCLUSION:** Internal complicated hernias are difficult to diagnose and once discovered intra-operative anatomical variations are present with special attribution to the management of the hernia sac.

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### 1. Introduction

Heinrich Wilhelm Gottfried Waldeyer-Hartz, German anatomist, born October 6, 1836, Hehlenan der Weser, Braunschweig, died January 23, 1921, Berlin.

Internal hernias mean herniation of a segment of intestine into an intraperitoneal fossa, are uncommon causes of intestinal obstruction and difficult to diagnose preoperatively.<sup>1</sup>

We report a case of 19 years old male presenting with acute abdomen due to strangulated Waldayer's hernia.

### 2. Case presentation

A male patient, 19 years old presented to the emergency department with diffuse acute abdominal colicky pain for 3 days, with absolute constipation, bilious vomiting and abdominal distention, with history of similar mild on & off attacks three times in the last two months. The patient was feverish 39, tachycardic 120/min, blood pressure 100/70. Local examination revealed abdominal distention with limitation of the abdominal movements, no evidence of external hernias or scars of previous operations. Diffuse abdominal tenderness, rebound tenderness and board like rigidity, hyper-resonance abdomen with no clinical evidence of free intraperitoneal fluid collection. The abdomen was dead silent on auscultation and empty rectum on P/R examination. **WBCs** (20,000), plain X-ray abdomen erect revealed multiple air fluid levels.

Urgent midline exploration was done and revealed strangulated loops of intestine in a sac to the right side of superior mesenteric artery in the mesenterico-parietal fossa so diagnosis of right

paraduodenal internal hernia (Waldayer's hernia) came to our senior staff mind.

Strangulation spared only the proximal 30 cm of the jejunum and the distal 5 cm of the ileum, resection of the gangrenous bowel was done after excision of the sac and closure of the defect and performing a right hemicolectomy with jejunum-transverse anastomosis. The patient had smooth postoperative course with stabilization of his vital signs and started oral intake on the 3rd postoperative day as usual, and the patient was discharged on the 6th postoperative day (Figs. 1–4).

### 3. Discussion

Internal hernias are uncommon cause of intestinal obstruction that are difficult to be diagnosed preoperatively. Internal abdominal hernias are defined as the herniation of a viscus through an intraperitoneal orifice or aperture within the confines of the peritoneal cavity. Incidence has been variably reported to be 1–2%.<sup>2</sup>

The hernias may be discovered as incidental findings at the time of laprotomy or autopsy, they may present as a complication in the form of bowel obstruction, strangulation or perforation. Internal hernias are an uncommon cause of bowel obstruction with a reported incidence of 0.2–0.9%.<sup>3</sup>

The orifice of the internal hernia may be a normal foramen as (Winslow's foramen) or an abnormal foramen as (para-duodenal, ileocaecal and others) or a pathological one as (orifice formed in a mesentery or omentum).<sup>4</sup>

More than 50% of internal hernias reported in the literature have been found to be paraduodenal.<sup>2</sup> Seventy-five percent of paraduodenal hernias occur on the left, while 25% occur on the right. Left paraduodenal hernias originate at the fossa of Landzert which is just lateral to the fourth segment of the duodenum and behind the IMV and ascending left colic artery.<sup>5</sup> Right paraduodenal hernias protrude into the ascending mesocolon, involving the fossa of

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Fig. 1. Rt paraduodenal Waldayer's hernia sac.



Fig. 2. The hernial sac with gangrenous loops of the jejunum and ileum (left).

Waldayer, behind the SMA and inferior to the third portion of the duodenum.<sup>6</sup>

The paraduodenal hernias are more common in males (M:F ratio 3:1).<sup>7</sup> The average age at diagnosis is 38.5 years with clinical presentation often due to chronic intermittent post-prandial abdominal pain.<sup>5</sup> An accurate incidence of paraduodenal hernias in infancy and childhood is unknown, but quite rare.<sup>8</sup>

Right-sided paraduodenal hernias are congenital disorders that may be related to the incomplete or absent 180° rotation of the



Fig. 3. The sac was opened with viable and gangrenous contents (right).



paraduodenal hernia.

Fig. 4. Long arrow demonstrates the direction of Rt paraduodenal hernia.

embryologic midgut.<sup>9</sup> Thus, the proximal portion of the small bowel remains positioned to the right of the superior mesenteric artery and may possibly be trapped in a peritoneal pocket within the Waldeyer's fossa.<sup>10</sup> This abnormal peritoneal recess, which is caused by a defect in the proximal jejunal mesentery, is rare, observed in no more than 1% of the population at autopsy.<sup>11</sup> In right-sided paraduodenal hernias, the entrapped small-bowel loops protrude through this peritoneal recess behind the superior mesenteric artery toward the right-sided mesocolon.

Treatment is based on reduction of the hernia and closure of the defect with care not to injure the vessels near the hernial sac margin.<sup>6</sup> With internal hernias, the best course is to correct the defects in the mesentery and the abnormalities of malrotation when incidentally discovered.

We think this is the seventh case of Waldayer's hernia in the last forty years.<sup>12–15</sup>

**Conflict of interest statement**

None.

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**Ethical approval**

Consent had been obtained from the patient fulfilling the Cairo University Ethical Committee rules to be presented upon request.

**Author contributions**

Mohammed Hassan MD: performing surgeon and data collection head of the team; Ahmed Hussein MD: data analysis the 1st assistant surgeon; Amr Ayad MD: data collection, data analysis; Karim Hoseny MD: 2nd assistant, writing the paper.

**References**

1. Takashi Y, Yasuo Y, Yasusuke M. Emergency abdominal surgery for sigmoid mesocolic hernia. *American Journal of Emergency Medicine* 2002;**20**:137–8.
2. Blachar A, Federle MP, Dodson SF. Internal hernia: clinical and imaging findings in 17 patients with emphasis on CT criteria. *Radiology* 2001;**218**:68–74.

3. William H, Rohan J. Abdominal hernias and their complications, including gastric volvulus. In: *Sleisenger and Fordtran's gastrointestinal and liver disease*. 7th ed. Philadelphia, PA: W.B. Saunders; 2002. p. 381–2.
4. Gullino D, Giordano O, Gullino E. Internal hernias of the abdomen: a propos of 14 cases. *Journal de Chirurgie* 1993;**130**:260–4.
5. Anthony T. Aunt Minnie's Corner. *Journal of Computer Assisted Tomography* 1998;**22**:844.
6. Eric R, Oscar R, Mitchel K. Paraduodenal hernia: a report of two cases. *American Surgeon* 2001;**67**:733–6.
7. Bartlett M, Wang C, William H. The surgical management of paraduodenal hernias. *Annals of Surgery* 1968;**168**:249–54.
8. Yves J, Alex S, Lesile W. Mesenteric hernia. *Surgery, Gynecology and Obstetrics* 1980;**150**:747–52.
9. Donnelly F. Left paraduodenal hernia leading to ileal obstruction. *Pediatric Radiology* 1996;**26**:534–6.
10. Khan MA, Lo AY, Vande Maele DM. Paraduodenal hernia. *American Surgeon* 1998;**64**:1218–22.
11. Ghahremani GG. Abdominal and pelvic hernias. In: Gore RM, Levine MS, editors. *Textbook of gastrointestinal radiology*. 2nd ed. Philadelphia, PA: W.B. Saunders; 1994. p. 230–5.
12. Palanivelu C, Rangarajan M, Jategaonkar PA, An NV, Senthilkumar K. Laparoscopic management of paraduodenal hernias: mesh and mesh-less repairs. A report of four cases. *Hernia* 2008;**12**:649–53.
13. Moran JM, Salas J, Sanjuán S, Amaya JL, Rincón P, Serrano A, et al. Paramesocolic hernias: consequences of delayed diagnosis. Report of three new cases. *Journal of Pediatric Surgery* 2004;**39**(January (1)):112–6.
14. Husain A, Bhat S, Roy AK, Sharma V, Dubey SA, Faridi MS. Internal hernia through paraduodenal recess with acute intestinal obstruction: a case report. *Indian Journal of Surgery* 2011, <http://dx.doi.org/10.1007/s12262-011-0243-4>.
15. Fukada T, Mukai H, Shimamura F, Furukawa T, Miyazaki M. A causal relationship between right paraduodenal hernia and superior mesenteric artery syndrome: a case report. *Journal of Medical Case Reports* 2010;**4**:159.

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