

Case Report
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Para-Duodenal Hernia Unusual Presentation of Abdominal Obstruction: A Case Report

Ahmad Essam Al-Mulla^{1*}, Maznah Al-Mutairi², Fawzia Ashkanani³, Mohammed alazar⁴, Mohammed Yousry abdelhamid² and Nouf Al Alenezi²

¹Senior Specialist General Surgery, Bariatric and Endoscopy, Farwaniya Hospital, Ministry of Health Kuwait (MOH)

²General Surgery Resident, Department of Surgery Farwaniya Hospital, Ministry of Health Kuwait (MOH)

³Consultant General Surgery, Department of Surgery Farwaniya Hospital Ministry of Health Kuwait (MOH)

⁴Lecturer of General Surgery Faculty of Medicine, Zagazig University, Egypt. Senior Registrar, Farwaniya Hospital, Department of Surgery, Ministry of Health Kuwait (MOH)

ABSTRACT

A para-duodenal hernia is a type of internal hernia, an atypical congenital anomaly. It presents as abdominal obstruction with adverse manifestations such as strangulation and infraction. Its symptoms can be ambiguous and variable, making them challenging to detect and diagnose. However, prompt intervention is required to avoid further complications. Here, we present the course and management of a 31-year-old male who contributed to our emergency department with symptoms of intestinal obstruction with an unusual C.T. scan and intra-operative findings.

*Corresponding author

Ahmad Essam Al-Mulla, Senior Specialist General Surgery, Bariatric and Endoscopy, Sabah Al-Nasser, Block 6, P. O. Box 13373, Farwaniya 81004, Farwaniya, Kuwait. Tel: 0096524888000; Email: draalmulla2007@gmail.com

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Introduction

An *internal hernia* is classically defined as herniation of a viscus through a normal or abnormal opening within the peritoneal cavity [1]. Congenital internal hernias are uncommon, accounting for only 1% of all abdominal hernias [2-8]. Types of internal hernia are as follows para duodenal hernia (PDH), pericecal, Winslow foramen, transmesenteric, transmesocolic, pelvic, intersigmoid, retro anastomotic, and transmittal hernia [3].

Para-duodenal hernia is an unusual congenital abnormality presented as malrotation of the midgut. It is the most common type of internal hernia (53%), displaying left side dominance over the right side, with a ratio of three to one [2]. It is also three times more common in males than females [4]. PDH can occur at any age; however, it typically presents between the fourth and sixth decades of life with significant complications [5].

Case Report

A 31-year-old male presented to our emergency department with a three-day history of diffused abdominal pain associated with constipation. Abdominal examination revealed generalized discomfort and tenderness in the paraumbilical and iliac fossa regions, with marked distention, sharp pain, absent bowel sounds, and empty rectum. The patient was admitted to the surgical ward

for further investigation. Laboratory investigation found an elevated white blood count (WBC). A computer tomography (C.T.) scan of the abdomen and pelvis with intravenous and oral contrast revealed significant dilation of the small bowel crowded at the left upper quadrant region, with no thickening nor a definitive transitional zone. This pattern was suggestive of small bowel obstruction (Figure1). The patient was informed of the result and consented to surgery. The patient initially underwent diagnostic laparoscopy. However, it was converted to a midline incision due to narrowed space and obscure vision caused by dilated bowel loops.



Figure 1: C.T. Abdomen demonstrating left side crowding of small bowel and stretching of mesenteric veins

Intra-Operative

Proximal jejunal loops were collapsed in the hernial sac (fossa of Landzert), causing an extraluminal compression effect on the splenic flexure with a backpressure effect at the transverse colon, right colon ileal loops and distal jejunal loops lead to close loop obstruction (Figure 2). A band was dissected, and the inferior mesenteric vein was identified (Figure 3). The small bowel loops and hernia sac were pulled and examined, and the defect was identified and closed with sutures. No other pathology or ischemia was observed in the bowel.

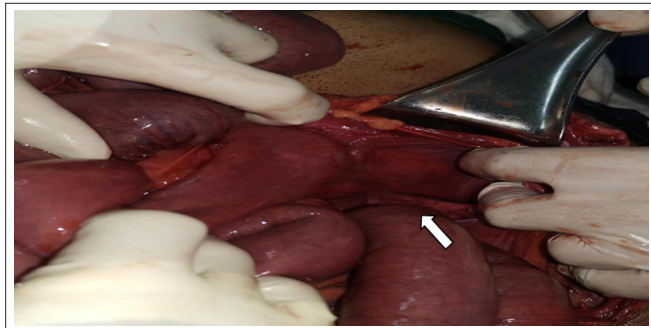


Figure 2: Dilated proximal small bowel loops at the foramen of Landzert

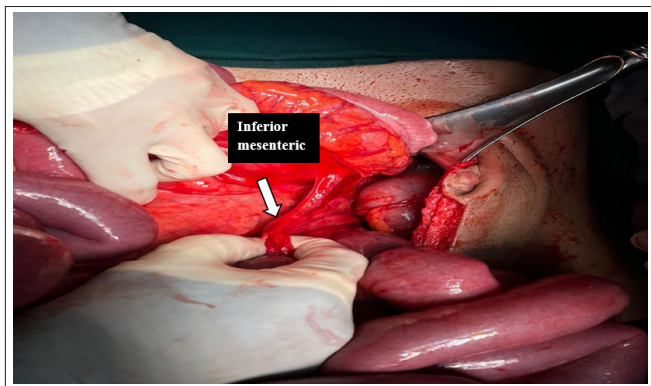


Figure 3: Inferior mesenteric vein identified and preserved

Postoperative

The patient had an uneventful postoperative recovery period and was discharged after resuming a regular diet and bowel motion. The first outpatient visit was 14 days after discharge. He had no complaint, and his wounds were clean and dry with no signs of infection.

Discussion

Para-duodenal hernia, also called congenital internal hernia or mesocolic hernia was initially described by Neubauer in 1786; Later, a further scientific description was provided by Treitz in 1857, who considered it a retroperitoneal protrusion of the abdominal viscera [6]. Jónnesco proposed an additional classification of right and left PDH in 1889 [7]. Left PDH is three times more prevalent than right PDH, presenting in 1-2 % of the population [8]. Left PDH is a congenital opening at the transverse mesocolon, causing retroperitoneal retro colic herniation of the proximal jejunum involving the (fossa of Landzert) as described in our case report. The right PDH, on the other hand, is a congenital disability leading to protrusion of the ascending mesocolon involving (the fossa of Waldyer) [9].

The rarity and vague abdominal symptoms of para-duodenal hernia make diagnosis challenging, potentially leading to adverse

conditions if left unnoticed. Patients may be asymptomatic or complain of chronic abdominal pain with vomiting, leading to other diagnoses such as peptic ulcer disease, gastritis, biliary colic, diverticular disease, inflammatory bowel disease, and adhesive bowel obstruction [9]. The lifetime probability of incarceration and strangulation is 50% and 20-50% mortality, it is, therefore, crucial to identify and manage PDH in a patient [10].

The first pre-operative diagnosis of PDH was described in 1921 by Kummer by barium study imaging [11]. However, upper gastrointestinal studies were replaced by higher resolution C.T. scans that offer multiplanar images that can be demonstrative and precise. PDH in a C.T. scan can be observed as a smooth sac-like mass of small bowel between the stomach and the pancreas at the level of ligament Treitz with a stretching or mispositioning of mesenteric vessels [8].

Management of paraduodenal hernia follows the same principle as hernia surgery, reducing and resecting the hernia sac and resecting the necrotic bowel, if present, with the closure of the wide orifices to prevent future recurrence. Surgical approaches can be in the form of open and minimally invasive surgery. Only 28 cases were resolved laparoscopically between 1998 and November 2015 [12, 13]. In the case presented here, open surgery was performed due to dense adhesions and dilated small bowel loops.

Conclusion

A paraduodenal hernia is an atypical differential diagnosis for small bowel obstruction. Nevertheless, it is essential to consider uncommon causes in patients with no prior surgical history, preventing adverse complications such as strangulation and bowel ischemia.

References

1. Meyers MA (1970) Paraduodenal hernias. Radiologic and arteriographic diagnosis. *Radiology* 95: 29-37.
2. Dayananda L, Sreekumar KP, Moorthy S, Prabhu NK (2006) Para Duodenal Hernias: A Pictorial Essay. *Indian Journal of Radiology and Imaging* 16: 469-471.
3. Joshi BR, Gautam S, Yadav SA, Gupta RK (2021) Case Report: Right paraduodenal hernia – a unique case of rare internal hernia presenting as acute small bowel obstruction. *F1000Research* 10: 1282.
4. Newsom BD, Kukora JS (1986) Congenital and acquired internal hernias: unusual causes of small bowel obstruction. *American Journal of Surgery* 152: 279-285
5. Brigham RA, Fallon WF, Saunders JR, Harmon JW, d'Avis JC (1984) Paraduodenal hernia: diagnosis and surgical management. *Surgery* 96: 498-502.
6. Fitzgibbons RJ, Greenburg AG, Nyhus LM (2002) *Nyhus and Condon's Hernia*. Lippincott Williams and Wilkins.
7. Jónnesco T (1889) Topographic anatomy of the duodenum and duodenal hernias. *Medical progress*.
8. Martin LC, Merkle EM, Thompson WM (2006) Review of internal hernias: radiographic and clinical findings. *American Journal of Roentgenology* 186: 703-717.
9. Tong RS, Sengupta S, Tjandra JJ (2002) Left paraduodenal hernia: case report and literature review. *ANZ Journal of Surgery* 72: 69-71.
10. Cundy TP, Di Marco AN, Hamady M, Darzi A (2014) Giant left paraduodenal hernia. *BMJ Case Rep* 2014: bcr201320240065.
11. Kadhem S, Ali MH, Al-Dera FH, Alzayer NA, Alyagoub HM (2020) Left paraduodenal hernia: Case report of rare cause of recurrent abdominal pain. *Cureus* 12: e7156.
12. Uematsu T, Kitamura H, Iwase M, K Yamashita, H Ogura,

- et al. (1998) Laparoscopic repair of a paraduodenal hernia. Surgical Endoscopy 12: 50-52.
13. Shadhu K, Ramlagun D, Ping X (2018) Para-duodenal hernia: a report of five cases and literature review. BMC Surgery 18: 32.

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