

Case Report

Left anterior paraduodenal hernia: a rare observation and clinical implications

Tarik Deflaoui^{1,*}, Anas Derkaoui¹, Mohammed Hassani¹, Rihaab Amara², Abdelali Guelli^{1,3}, Rachid Jabi^{1,3}, Mohammed Bouziane^{1,3}

¹Department of General Surgery, Mohammed VI University Hospital, Oujda, Morocco

²Department of Medicine, Mohammed VI University Hospital, Faculty of Medicine and Pharmacy, Mohammed I University, Oujda, Morocco

³Laboratory of Anatomy, Microsurgery and Surgery Experimental and Medical Simulation (LAMCESM), Faculty of Medicine and Pharmacy, Mohammed Ist University, Oujda, Morocco

*Corresponding author. Department of General Surgery, Mohammed VI University Hospital, Oujda, Morocco. E-mail: deflaouitarik@gmail.com

Abstract

Paraduodenal hernias account for ~53% of internal hernias due to embryological anomalies in intestinal rotation. While left paraduodenal hernias are the most common type, the anterior left variant is exceptionally rare. It involves herniation of the small intestine in front of the duodenum through a mesenteric defect. We present a case of a left anterior paraduodenal hernia diagnosed and surgically treated in our department, along with a discussion of its clinical and therapeutic aspects.

Keywords: internal hernia; paraduodenal hernia; intestinal obstruction; emergency surgery; mesenteric defect

Introduction

Intestinal obstruction caused by internal hernias is rare, accounting for only 1%–5% of cases of acute bowel obstruction [1]. Among these, paraduodenal hernias (PDH) are the most common, representing 53%, but the anterior left variant is extremely rare. This anomaly arises from abnormal midgut rotation, leading to defects in the mesentery or mesocolon [2]. Given its nonspecific clinical presentation, diagnosing this condition can be challenging. Computed tomography (CT) is critical for identifying such abnormalities [3]. Treatment is surgical, aiming to reduce the hernia and prevent recurrence or complications [4].

Case presentation

A 45-year-old man with no significant medical history presented to the emergency department with acute epigastric pain accompanied by bilious vomiting. Physical examination revealed epigastric tenderness without guarding or signs of peritonitis.

Abdominal CT revealed a cluster of small bowel loops in front of the duodenum on the left side of the midline, associated with proximal mechanical obstruction. These findings were consistent with a left paraduodenal hernia.

Laparotomy confirmed a left anterior paraduodenal hernia, with the small bowel incarcerated through a defect in the mesocolon. The herniated bowel was manually reduced, and the defect was enlarged to prevent recurrence. There were no signs of strangulation. The patient had an uncomplicated postoperative recovery (Fig. 1 and Video 1).

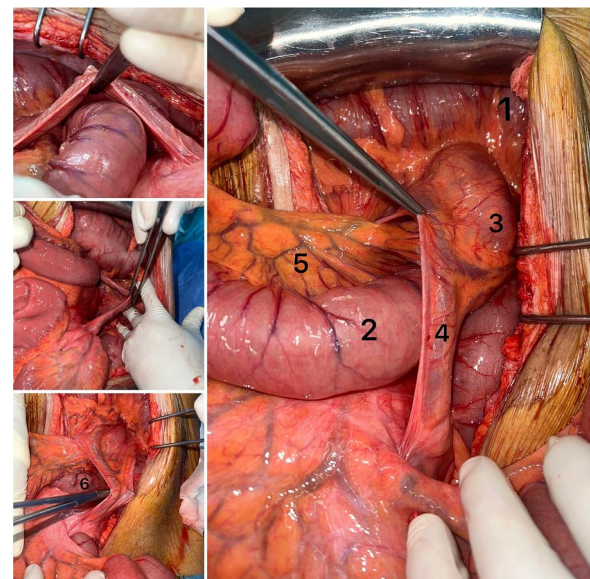


Figure 1. Left anterior paraduodenal hernia. (1) left colic flexure, (2) ileum, (3) descending mesocolon, (4) ascending left colic artery, (5) mesentery, (6) jejunum.

Discussion

Paraduodenal hernias result from abnormal midgut rotation, leading to defects in the transverse mesocolon [2]. In the left variant, the small intestine herniates through an opening

Received: January 27, 2025. Accepted: February 16, 2025

Published by Oxford University Press and JSCR Publishing Ltd. © The Author(s) 2025.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact journals.permissions@oup.com

anterior to the ligament of Treitz. The anterior left variant, although exceptionally rare, can lead to serious complications such as intestinal obstruction or ischemia [4, 5].

Patients often present with recurrent abdominal pain or acute obstructive symptoms. CT imaging is the diagnostic modality of choice, typically showing clustered small bowel loops to the left of the midline with signs of proximal obstruction and displaced mesenteric vessels [6, 7].

Blachar et al. emphasized the role of CT in differentiating internal hernias and proposed specific diagnostic criteria for paraduodenal hernias [8]. Uematsu et al. highlighted laparoscopy as a valuable diagnostic and therapeutic tool [9].

The treatment for paraduodenal hernias is exclusively surgical. This involves reducing the herniated bowel and widening the hernia defect to prevent recurrence. Unlike other types of hernias, closing the defect is generally avoided to prevent vascular compromise or secondary obstruction [10].

Conclusion

Left anterior paraduodenal hernia is a rare clinical entity with significant implications. Prompt recognition through imaging and appropriate surgical management are essential to prevent severe complications.

Supplementary material

Supplementary material is available at *Journal of Surgical Case Reports* online.

Conflict of interest statement

None declared.

Funding

None declared.

References

1. Meyers MA. *Dynamic Radiology of the Abdomen: Normal and Pathologic Anatomy*. Springer-Verlag, 1988. <https://doi.org/10.1007/978-1-4757-3961-9>.
2. Takeyama N, Gokan T, Ohgiya Y, et al. CT of internal hernias. *Radiographics* 2005;**25**:997–1015. <https://doi.org/10.1148/rg.254045035>.
3. Martin LC, Merkle EM, Thompson WM. Review of internal hernias: radiographic and clinical findings. *AJR Am J Roentgenol* 2006;**186**:703–17. <https://doi.org/10.2214/AJR.05.0644>.
4. Fan HP, Yang AD, Chang YJ, et al. Clinical spectrum of internal hernia: a surgical emergency. *Surg Today* 2008;**38**:899–904. <https://doi.org/10.1007/s00595-007-3756-5>.
5. Mizouni A, Harrabi F, Farhat W, et al. Hernie para duodénale gauche: Une cause rare d'occlusion intestinale aiguë. *Pan Afr Med J* 2020;**36**:326. <https://doi.org/10.11604/pamj.2020.36.326.24958>.
6. Alila M, Marouni A, Toughrai I. Hernie paraduodénale gauche: Une cause rare d'occlusion intestinale. *Pan Afr Med J* 2017;**28**:32. <https://doi.org/10.11604/pamj.2017.28.32.13497>.
7. Kojima K, Inokuchi M, Kato K, et al. Laparoscopic surgery for left paraduodenal hernia. *J Laparoendosc Adv Surg Tech A* 2010;**20**:695–8.
8. 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. <https://doi.org/10.1148/radiology.218.1.r01ja5368>.
9. Uematsu T, Kitamura H, Iwase H, et al. Laparoscopic repair of left paraduodenal hernia. *Surg Endosc* 1998;**12**:50–2. <https://doi.org/10.1007/s004649900591>.
10. Brigham RA, Fallon WF Jr, Saunders JR, et al. Paraduodenal hernia: diagnosis and surgical management. *Surgery* 1990;**108**:668–71.