SAS Journal of Surgery
Abbreviated Key Title: SAS J Surg
ISSN 2454-5104
Journal homepage: https://www.saspublishers.com

OPEN ACCESS

Digestive Surgical Oncology

A Diagnostic Challenge in a Patient with Persistent Vomiting: Hiatal Hernia Associated with an Atypical Interhepato-Diaphragmatic Hernia

Merghad Hatim[1*], Ouzzaouit Hamza[2], Abouker Ibrahim[1], Brahmi Oussama[2], Messari Loubna[3], Mssrouri Rahal[2], Benamr Said[2], Medaghri Jalil[2], Hamid Mohamed[2], Laalou Talha[2]

[1]Department of Digestive Surgical Oncology, National Institute of Oncology, Rabat, Morocco
[2]Department of Digestive Surgery B, Ibn Sina University Hospital, Mohammed V University in Rabat, Morocco
[3]Department of Radiology, IBN Sina University Hospital, Mohammed V University, Rabat, Morocco

DOI: https://doi.org/10.36347/sasjs.2026.v12i03.008 | **Received:** 07.02.2026 | **Accepted:** 12.03.2026 | **Published:** 18.03.2026

***Corresponding author:** Merghad Hatim
Department of Digestive Surgical Oncology, National Institute of Oncology, Rabat, Morocco

Abstract **Case Report**

This is the case of a 32-year-old man with a congenital spinal kyphoscoliosis, admitted to the hospital for persistent vomiting without an underlying cause. Imaging and endoscopic explorations couldn't decide a clear diagnosis, and laparoscopic surgery confirmed the diagnosis of an atypical interhepato-diaphragmatic hernia associated with a hiatal hernia. This highlights the importance of clinical examination, the good hierarchical paraclinical explorations, and the importance of knowing when to and not to operate. And the importance of multimodal assessment.

Keywords: Innovation, Strategy, Scalability, Optimization, Synergy, Visionary.

INTRODUCTION

Persistent vomiting in adults may result from a wide range of aetiologies, classically grouped into gastrointestinal, neurological, metabolic/endocrine, infectious, drug-related, and psychogenic causes.[1]

The clinical presentation of hiatal hernias is variable, ranging from asymptomatic forms to severe digestive or extra digestive symptoms, depending on the type and size of the hernia and the presence of associated complications.[2] Therefore, interhepato-diaphragmatic hernias are exceptionally rare entities. Their true incidence remains unknown due to the low number of reported cases and their frequent misdiagnosis or incidental discovery.[3]

The diagnosis of rare diaphragmatic hernias may be particularly challenging due to their non-specific clinical presentation and atypical radiological features.[3] We report a rare association of a hiatal hernia with an atypical interhepato-diaphragmatic hernia presenting as persistent vomiting with inconclusive imaging and difficult endoscopy.

CASE PRESENTATION

A 32-year-old man with a congenital spinal kyphoscoliosis was admitted to the hospital for persistent vomiting without an underlying cause, associated with epigastric pain and weight loss. Physical examination showed no specific features. The evolution was marked by worsening of the pain with (arret de matières sans arret de gaz).

Laboratory Tests were normal except for a hypokalaemia secondary to vomiting treated by IV supplementation. Although CT scan showed a major gastric distension with fundus on the left and antrum on the right, upstream of an area of disparity in the caliber of the proximal duodenum at the level of the aortomesenteric clamp, suggesting partial gastric torsion. Difficulties in the CT were specifically related to non-specific gastric distension, atypical anatomical relationships, and challenges with other differential diagnoses, including superior mesenteric artery syndrome, hiatal hernia, diaphragmatic hernia, Chilaiditi syndrome, and gastric volvulus.

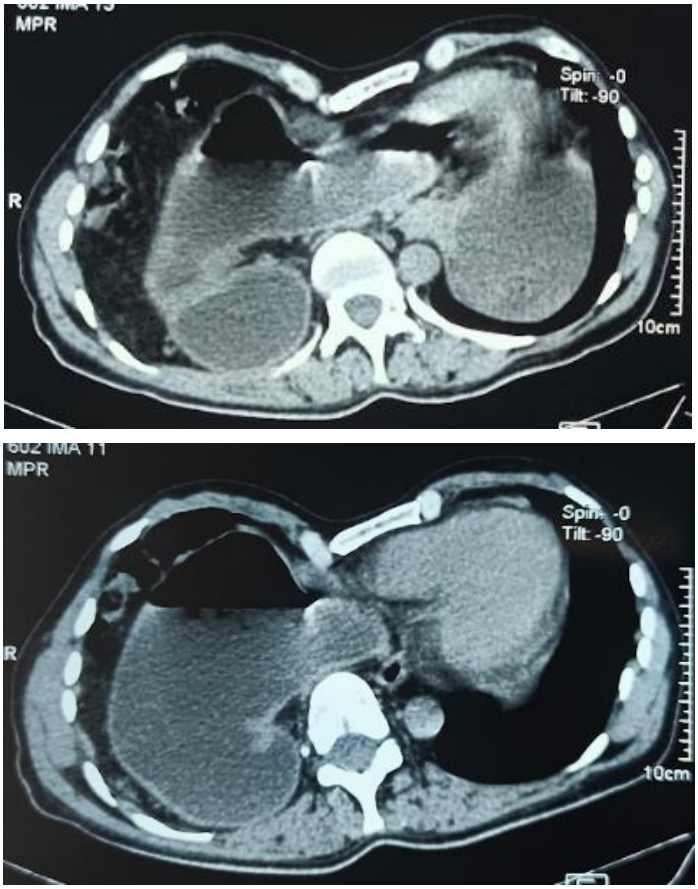

Figure 1: CT scan showing a major gastric distention, with the fundus on the left and the antrum on the right side

Endoscopic exploration was limited due to a full stomach, resulting in limited vision and initial non-conclusive results.

Repetitive esophago-gastro-duodenal endoscopy finally showed a type II paraesophageal hiatal hernia complicated by fundic volvulus.

The final preoperative retained diagnosis is a hiatal hernia complicated with gastric volvulus.

Surgery was indicated, a laparoscopic approach was performed, exploration showed an atypical inter-hepato-phrenic hernia, with colic and gastric content, associated with a hiatal hernia with no signs of complications.

The inter-hepato-phrenic hernia was formed by a hernial sac whose structure, after dissection, is similar to the pleura.

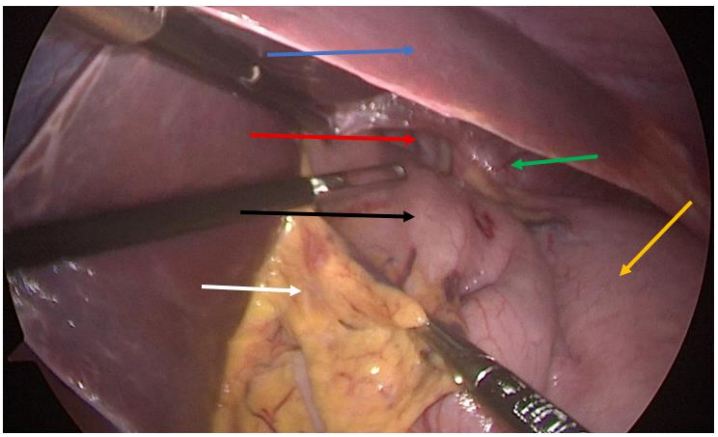

Figure 2: A per operative image showing the hepato-phrenic hernia with gastric antrum and transverse colon inside it, and the hiatal hernia. Blue arrow =left lobe of the liver, Red arrow = Interhepato phrenic hernia containing the gastric antrum and the transverse colon, Black arrow= gastric antrum, White arrow = the transverse colon and the greater omentum, Green arrow = oesophageal hiatus, Yellow arrow = body of the stomach)

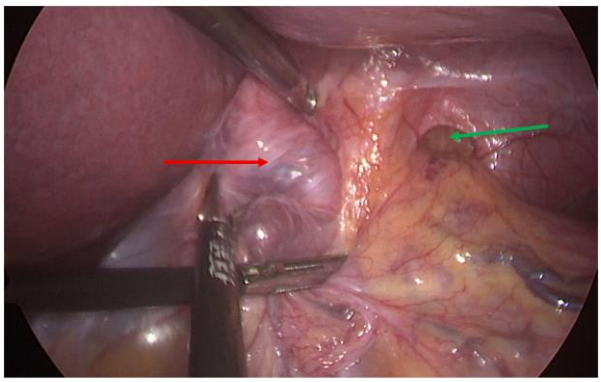

Figure 3: A per operative image showing the hepato-phrenic hernia (Red arrow) and the hiatal hernia (Green arrow)

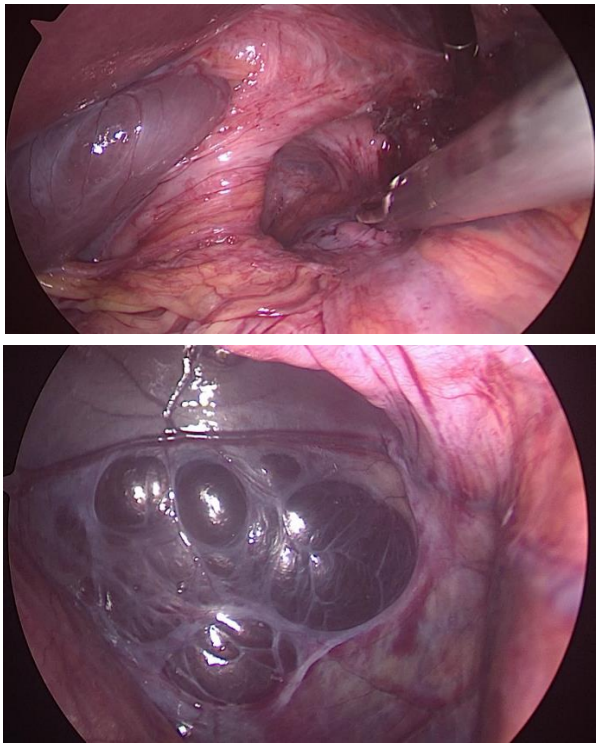

Figure 4: A peroperative view showing the inter-hepato-phrenic hernia (A = external view, B = internal view of the hernial sac)

The procedure performed was the Nissen procedure, in which the gastric fundus is mobilized and wrapped 360° around the distal oesophagus. This wrap reinforces the lower oesophageal sphincter, preventing acid reflux. And the interhepatodiaphragmatic hernia was closed with a non-resorbable thread.

A 16-gauge Redon drain was placed under the liver for syphoning; the other was aspirational and was placed in the oesophageal hiatus.

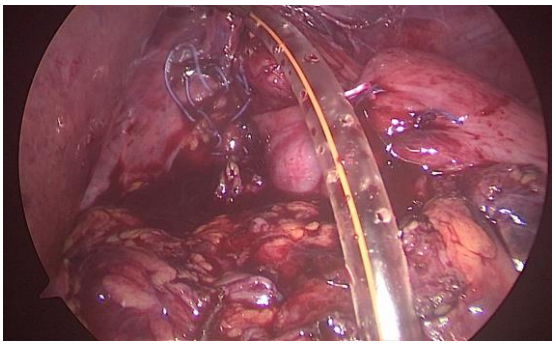

Figure 5: A Peroperative look with Nissen's fundoplication procedure, the hepato-phrenic was closed with a non-resorbable thread, and a Redon drain was put inside the oesophageal hiatus

Postoperative course was uneventful, with a complete resolution of vomiting; the patient was discharged 4 days postoperatively.

DISCUSSION

Vomiting is a common symptom with a wide range of gastrointestinal, metabolic, neurological, and mechanical causes.[4] While most cases are related to benign conditions, persistent vomiting should raise suspicion for obstructive or anatomical abnormalities. Hiatal hernias are a common mechanical cause; however, diaphragmatic hernias are rare. Atypical forms, such as interhepato-diaphragmatic hernias, are exceptionally rare and often difficult to diagnose due to their nonspecific presentation and misleading imaging findings.[3]

Diagnostic challenges are mainly related to misleading imaging findings and technical limitations of endoscopic exploration.[5] In atypical diaphragmatic hernias, especially interhepato-diaphragmatic forms, imaging may be inconclusive because of the unusual anatomical location and the absence of typical signs of intrathoracic herniation, leading to misinterpretation or delayed diagnosis on initial CT scans.[6]

In addition, upper gastrointestinal endoscopy was technically difficult in this case due to significant gastric stasis, which limited visualization of the esophagogastric junction and the safe progression of the endoscope. Gastric stasis, often secondary to partial obstruction or impaired gastric emptying, is a well-recognized factor that reduces the diagnostic output of endoscopy and may delay definitive diagnosis.[3] These limitations underscore the need for a multimodal diagnostic approach that combines careful imaging review, endoscopy, and clinical correlation in patients with persistent vomiting and inconclusive investigations.

Interhepato-diaphragmatic hernias are extremely rare, with most data limited to isolated case reports and small case series. Unlike classic Bochdalek or Morgagni hernias, these atypical hernias occur in an unusual anatomical space between the liver and diaphragm, which contributes to under-recognition and frequent misdiagnosis. [1,7]

Associations between interhepato-diaphragmatic hernias and hiatal hernias have only rarely been reported, but similar cases describe complex diaphragmatic anatomy leading to diagnostic confusion. Published reports highlight recurrent diagnostic pitfalls, including misleading CT findings, misclassification as more common hiatal or paraesophageal hernias, and delayed diagnosis due to inconclusive endoscopy, particularly in the presence of gastric distension or intermittent herniation.[3,6,8]

From a clinical perspective, unusual diaphragmatic hernias should be suspected in patients with persistent or recurrent vomiting when standard imaging and endoscopic evaluations remain inconclusive. Repeated or complementary investigations, such as careful multiplanar CT analysis, contrast studies, or reassessment after gastric decompression, may be necessary to clarify the diagnosis.[1,9]

Management of the association between a hiatal hernia and an atypical interhepato-diaphragmatic hernia is primarily surgical, particularly in symptomatic patients or in the presence of obstructive manifestations. While conservative treatment with proton pump inhibitors and supportive measures may be considered in selected asymptomatic sliding hiatal hernias, it is not appropriate in cases involving paraesophageal components or associated diaphragmatic defects due to the risk of incarceration or volvulus.[5], [10] The laparoscopic approach is currently considered the standard technique, offering reduced postoperative morbidity and faster recovery compared to open surgery, although laparotomy may be required in complex or unstable cases.[10], [11] Surgical principles include reduction of herniated viscera, complete excision of the hernia sac when possible, and tension-free closure of the diaphragmatic defects.[10] In hiatal hernia repair, crural approximation is typically reinforced by fundoplication to reduce postoperative reflux and recurrence.[10] For atypical diaphragmatic defects, primary suture repair is performed when possible, with mesh reinforcement recommended for large or tensioned defects. When both hernias coexist, simultaneous repair during the same procedure is essential to restore normal anatomy and prevent persistent or recurrent symptoms.[12-14]

This case underscores the importance of suspicions and avoiding reliance on a single diagnostic modality. For clinicians, the key lesson is that persistent symptoms despite non-diagnostic examinations should prompt reconsideration of rare anatomical causes, allowing timely diagnosis and appropriate surgical management.

CONCLUSION

Persistent vomiting may represent an atypical presentation of rare diaphragmatic hernias and should not be attributed solely to common gastrointestinal disorders when standard investigations are inconclusive. This case highlights the diagnostic challenges posed by unusual anatomical hernias, particularly when imaging and endoscopy are limited by atypical anatomy and gastric stasis. A high index of suspicion and a multimodal diagnostic approach are essential to avoid diagnostic delay and to ensure timely and appropriate surgical management.

REFERENCES

1. Camilleri M, Parkman HP, Shafi MA, Abell TL, Gerson L., “Clinical guideline: management of

gastroparesis.," in *Am J Gastroenterol. 2022;117(8):1197-1220.*
2. Kahrilas PJ, Kim HC, Pandolfino JE., "Approaches to the diagnosis and grading of hiatal hernia.," *Best Pract Res Clin Gastroenterol. 2021;54-55:101743.*
3. "Rare diaphragmatic hernias in adults: experience of a tertiary center and narrative review of the literature. Diagnostics (Basel). 2024;14(1):85.," *Diagnostics (Basel). 2024;14(1):85.*
4. C. Guerci *et al.,* "post-traumatic diaphragmatic hernia: a rare case of intestinal obstruction," *J. Surg. Case Rep.*, vol. 2025, no. 3, p. rjaf163, Mar. 2025, doi: 10.1093/jscr/rjaf163.
5. A. Parikh, T. Parikh, and I. Hader, "Overlooked parahiatal hernia: diagnostic challenges and implications of a case report," *AME Case Rep.*, vol. 9, p. 136, 2025, doi: 10.21037/acr-25-26.
6. H. G. Nugraha, M. Agustina, and H. M. Nataprawira, "Diagnostic challenges of hiatal hernia Type IV: An imaging perspective," *Radiol. Case Rep.*, vol. 20, no. 1, pp. 437–441, Jan. 2025, doi: 10.1016/j.radcr.2024.09.147.
7. W. Waddingham, U. Kamran, B. Kumar, N. J. Trudgill, Z. P. Tsiamoulos, and M. Banks, "Complications of diagnostic upper Gastrointestinal endoscopy: common and rare – recognition, assessment and management," *BMJ Open Gastroenterol.*, vol. 9, no. 1, p. e000688, Dec. 2022, doi: 10.1136/bmjgast-2021-000688.
8. Mullins ME, Stein J, Saini SS, Mueller PR., "Prevalence of incidental Bochdalek's hernia in a large adult population.," *AJR Am J Roentgenol.*, 215():906-910 2020.
9. "Emergency surgery due to diaphragmatic hernia in adults: diagnostic and therapeutic aspects.," in *Ann Ital Chir.*
10. Kohn GP, Price RR, DeMeester SR, *et al.,* "Guidelines for the management of hiatal hernia," in *Surg Endosc.*, 2013;27:4409-4428.
11. Oor JE, Roks DJ, Koetje JH, *et al.,* "Laparoscopic repair of giant paraesophageal hernia: long-term outcome.," *Ann Surg. 2016;263:1068-1074.*
12. Grimes OF., "Traumatic diaphragmatic hernia.," *Am J Surg*, 128:175-181 1974.
13. Rashid F, Chakrabarty MM, Singh R, Iftikhar SY., "A review on delayed presentation of diaphragmatic hernia.," *World J Emerg Surg. 2009;4:32.*
14. Shackelford RT, Zuidema GD, Yeo CJ., "Hiatal hernia," in *Shackelford's Surgery of the Alimentary Tract.*, 8th ed.