International Journal of Medical Science and Clinical Research Studies

ISSN(print): 2767-8326, ISSN(online): 2767-8342

Volume 04 Issue 08 August 2024

Page No: 1565-1571

DOI: https://doi.org/10.47191/ijmscrs/v4-i08-26, Impact Factor: 7.949

Complex Hiatal Hernia with Gastric Volvulus Successfully Managed by Hiatal Plasty and Nissen Fundoplication: A Case Report

Ethel Jenny García Cruz[1], Gamaliel Munive Molina[1], Oscar García Sánchez[2], Gerardo Alvarado Romero[2]

[1]Departamento de Cirugía general, Hospital General Regional No1. Instituto Mexicano del seguro social. Vicente Guerrero, México.

[2]Departamento de cirugía general del Hospital General Zona Norte de Puebla "Bicentenario de la Independencia", Secretaría de salud

ABSTRACT

Background: Hiatal hernias, particularly those complicated by gastric volvulus, represent a rare but potentially life-threatening condition. Prompt diagnosis and surgical intervention are crucial to prevent severe complications such as strangulation and ischemia of the stomach. This case report details the presentation, diagnosis, and successful surgical management of a Type IV hiatal hernia with an associated gastric volvulus using hiatal plasty and Nissen fundoplication.

Case Presentation: We present the case of a 65-year-old male with a history of recurrent epigastric pain, nausea, and postprandial vomiting, who was diagnosed with a Type IV hiatal hernia complicated by an organoaxial gastric volvulus. Imaging studies confirmed the diagnosis, revealing significant herniation of the stomach into the thoracic cavity. The patient underwent elective surgical repair involving a hiatal plasty to restore the diaphragmatic hiatus, followed by a Nissen fundoplication to prevent recurrence. Postoperative recovery was uneventful, with resolution of symptoms and no recurrence at a six-month follow-up.

Conclusion: This case underscores the importance of timely recognition and appropriate surgical management of hiatal hernias complicated by gastric volvulus. The combined approach of hiatal plasty and Nissen fundoplication provides effective relief and prevents recurrence, contributing to favorable long-term outcomes.

KEYWORDS: Hiatal hernia, Gastric volvulus, Hiatal plasty, Nissen fundoplication Organ-axial volvulus

ARTICLE DETAILS

Published On:
29 August 2024

Available on:
https://ijmscr.org/

INTRODUCTION

Hiatal hernias are a common anatomical anomaly in which abdominal contents herniate through the esophageal hiatus into the thoracic cavity. They are categorized into four types, with Type IV being the most complex, characterized by herniation of not just the stomach but other abdominal organs such as the colon or small intestine into the thoracic cavity. Although many hiatal hernias are asymptomatic or present with mild gastroesophageal reflux symptoms, the presence of a gastric volvulus—a twisting of the stomach around its axis—constitutes a surgical emergency due to the risk of strangulation, ischemia, and subsequent perforation.1,2,3

Gastric volvulus can be classified based on the axis of rotation: organoaxial, mesenteroaxial, or a combination of both. The organoaxial type, in which the stomach rotates around its long axis, is the most common and is often associated with chronic symptoms of obstruction, as seen in this case. Early diagnosis is essential but can be challenging due to the nonspecific nature of symptoms, which often mimic more benign gastrointestinal disorders.4,5,6

This case report highlights a complex presentation of a Type IV hiatal hernia complicated by an organoaxial gastric volvulus. We describe the successful management of this condition through a combined surgical approach involving hiatal plasty and Nissen fundoplication. This strategy not only addresses the acute volvulus but also reinforces the anatomical defect, thereby preventing recurrence and improving patient outcomes. The report emphasizes the need for a high index of suspicion and prompt intervention in cases of symptomatic hiatal hernia to prevent severe complications.

CASE PRESENTATION

A 78-year-old male with a 10-year history of systemic arterial disease treated with losartan and amlodipine, mixed dyslipidemia treated with atorvastatin. Surgical history; history of ischemic heart disease that required cardiac catheterization 4 years ago, open prostatectomy 20 years ago, right inguinal plasty 5 months ago, the rest he denies.

His current condition began 2 months ago with the presence of dyspnea of medium efforts, dysphagia, emesis and weight loss of more than 10 kg, he went to a private hospital with the presence of dyspnea and due to the history of cardiac catheterization, an electrocardiogram was performed, with no alterations reported, granting anxiolytic treatment without improvement of the symptoms, an endoscopic study was performed, reporting gastric volvulus axial mesentero axial, The physical examination found the patient with symmetrical thorax with good entry and exit of air, without auscultation of crackles or wheezing, rhythmic heart sounds of good tone and intensity, semiglobose abdomen at the expense of adipose panniculus, peristalsis present, not painful on palpation, without data of peritoneal irritation, the rest of the normal exploration.

Laboratory studies were taken reporting leukocytes: 8.73 x 10^3/µL, hemoglobin: 14.5g/dL, hematocrit: 48.4%, platelets: 151 600/µ, urea: 41.9 md/dL, creatinine: 1.12 mg/dL, sodium: 139 mEq/L, calcium: 8.6 mEq/L potassium: 4.1 mEq/L. Abdominopelvic tomography was performed reporting hiatal hernia with passage of gastric chamber in the thorax and intestinal loops,(Figure 1,2,3) due to the findings, surgical treatment was decided by hiatal plasty and Nissen type fundoplication(Figure 4) finding: hiatal hernia with hernial ring of 15 cm, containing transverse colon and stomach with organoaxial volvulus without vascular compromise, Figure 5,6) contained in posterior mediastinum, multiple adhesions of esophagus to mediastinum Figure 7,8). After the surgery the patient presented subcutaneous emphysema so a thorax x-ray was taken without observing pneumothorax, a subucutaneous tube was placed and the subcutaneous emphysema completely subsided and was removed on the 3rd day, the patient was intubated for post-surgical recovery, During this period he presented atrial fibrillation with rapid ventricular response reversed with amiodarone, it was decided to interconsultation to intensive care giving integral management until clinical improvement, with adequate clinical evolution, penrose was withdrawn after 6 days which was wasting little serohematic liquid. The patient was discharged 7 days later without complications, tolerating the oral route and ambulating. days later, tolerating the oral route and wandering.

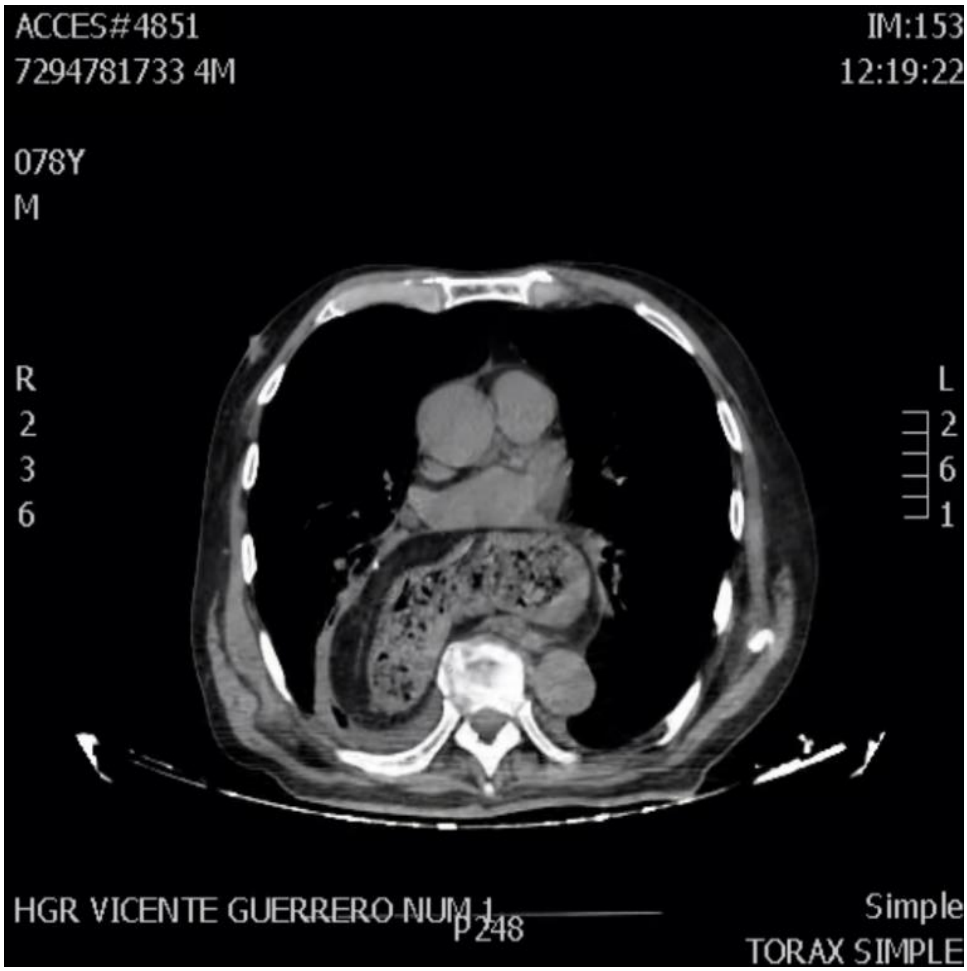

Figure 1. Thoracoabdominal CT showing intrathoracic stomach in axial section.

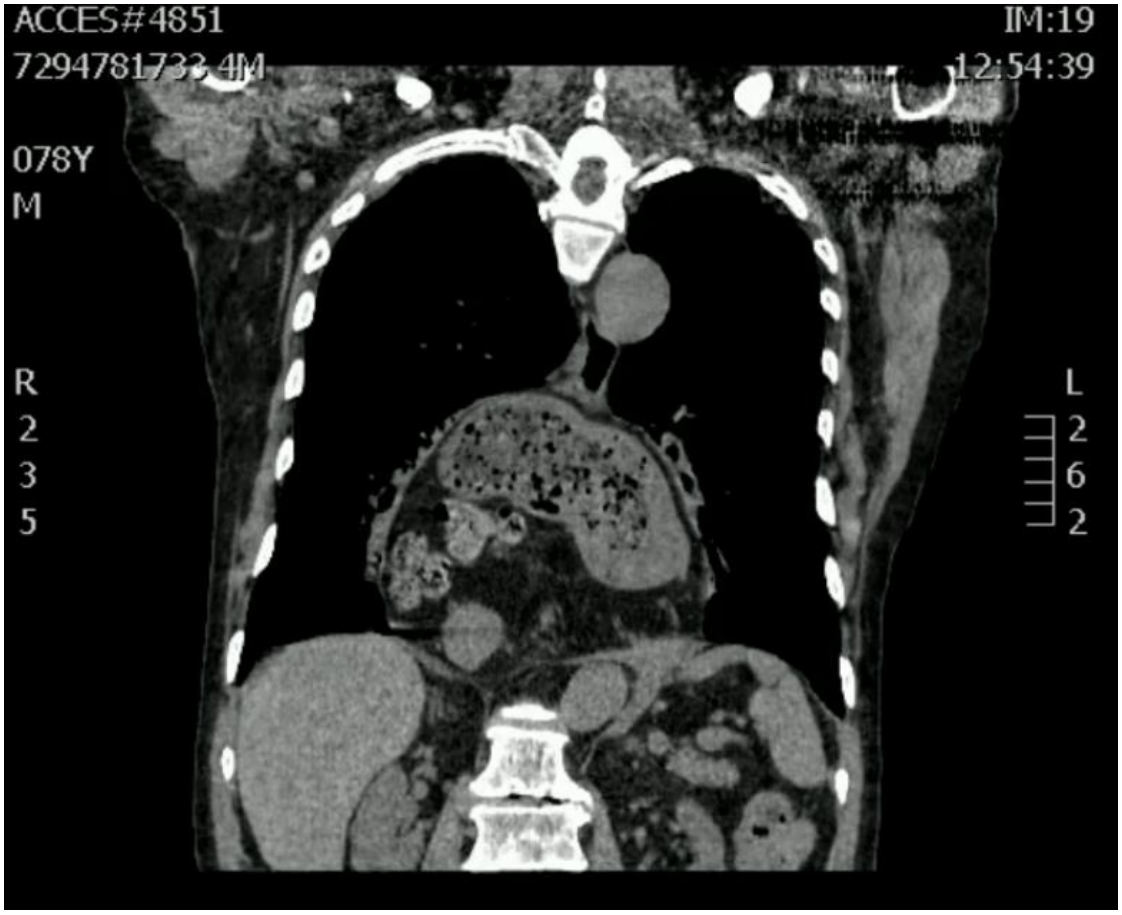

Figure 2. Thoracoabdominal CT scan showing stomach and colon in mediastinum coronal view

Figure 3. Thoracoabdominal CT scan showing the stomach and colon in the mediastinum in sagittal view.

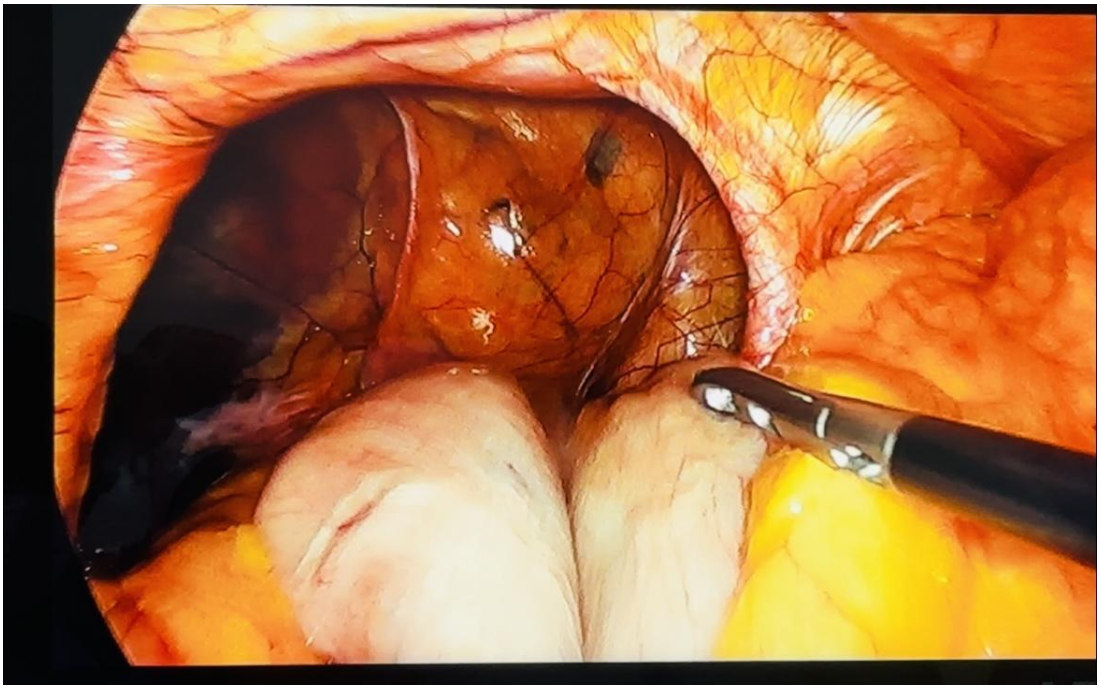

Figure 4: Transoperative photograph: giant hiatal hernia with a hernial defect of approximately 15 cm with adhesions, which conditions stomach volvulus.

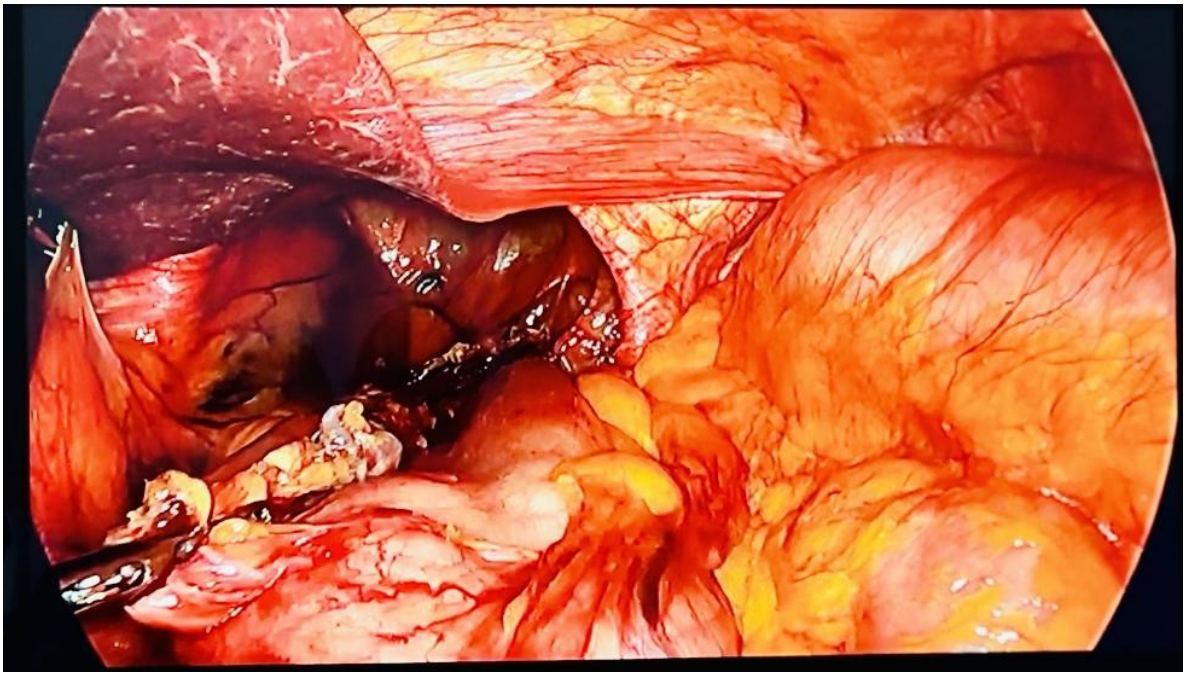

Figure 5: Photograph showing the release of adhesions that conditioned stomach volvulus.

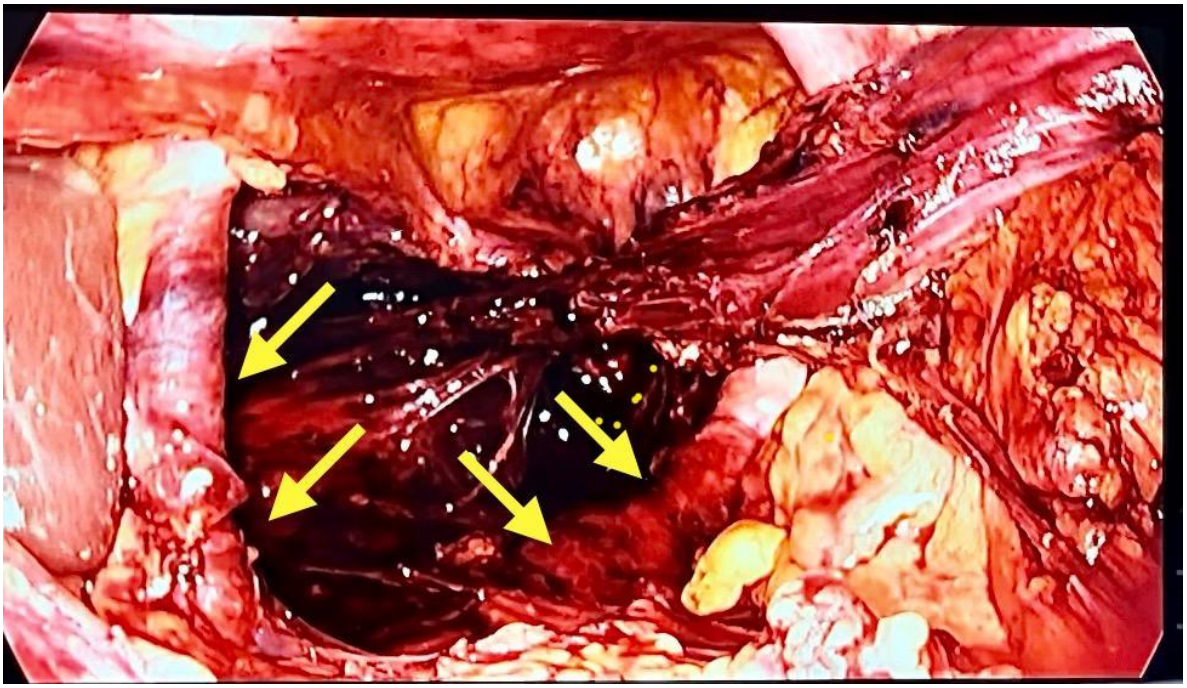

Figure 6:Transoperative photograph showing dissection of the hiatus showing pillars.

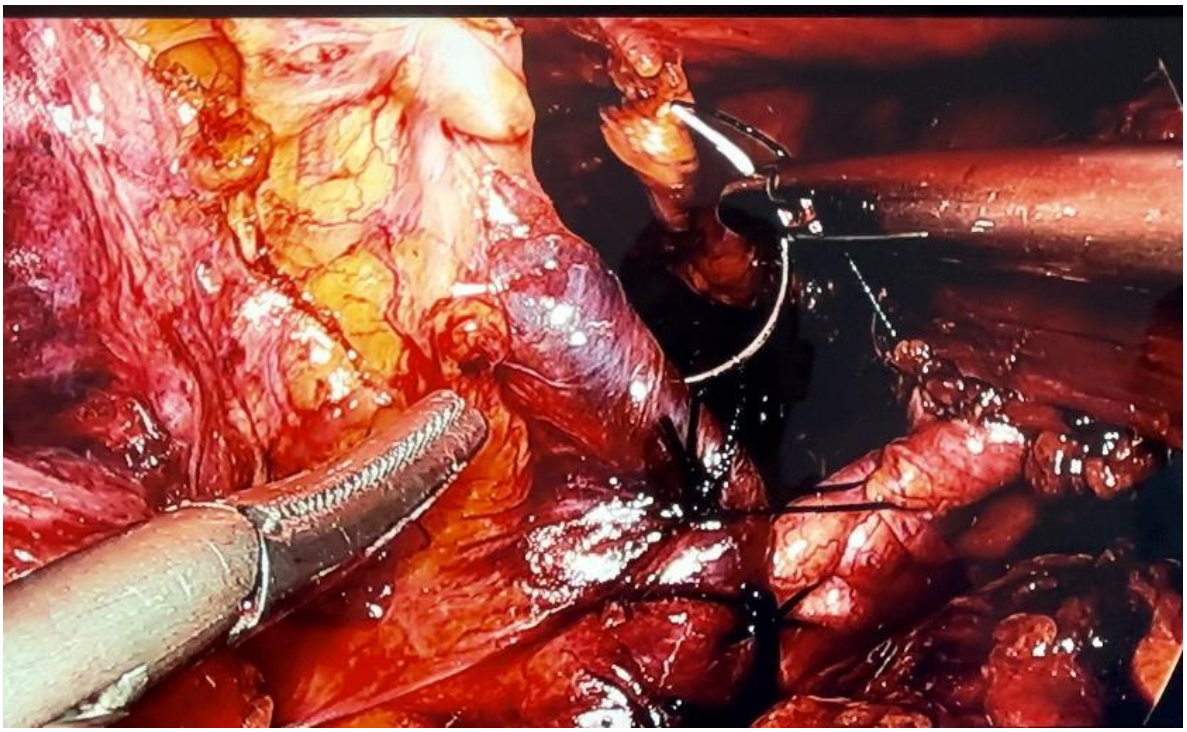

Figure 7: Photograph showing closure of the abutments (hiatal plasty with 6 lower and 3 upper stitches with 2-0 silk).

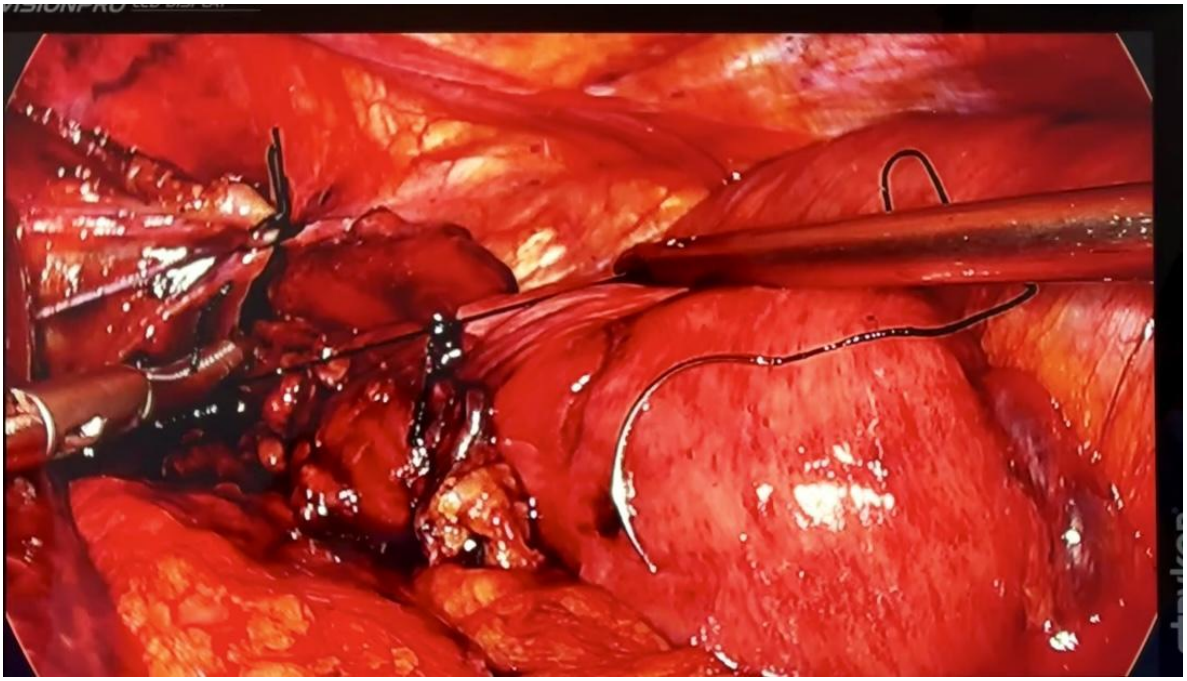

Figure 8: Photograph showing Nissen type fundoplication points.

CONCLUSION

The management of a Type IV hiatal hernia complicated by gastric volvulus presents a significant clinical challenge, given the potential for life-threatening complications such as strangulation, ischemia, and perforation of the stomach. The case discussed in this report illustrates the critical importance of timely diagnosis and surgical intervention in such complex scenarios. The successful resolution of the volvulus and restoration of normal gastrointestinal anatomy through hiatal plasty, combined with Nissen fundoplication, underscores the efficacy of this surgical approach in preventing recurrence and ensuring favorable long-term outcomes.

This case emphasizes the necessity for a high index of suspicion in patients presenting with nonspecific symptoms such as epigastric pain, nausea, and vomiting, particularly in the presence of a known hiatal hernia. Diagnostic imaging, including computed tomography (CT) and upper gastrointestinal series, plays a pivotal role in confirming the diagnosis and assessing the extent of organ herniation and volvulus. The organoaxial gastric volvulus, as observed in this patient, represents the most common form of volvulus in the setting of a hiatal hernia and requires prompt surgical correction to avert catastrophic outcomes.

The surgical approach employed—hiatal plasty combined with Nissen fundoplication—addresses both the anatomical defect and the underlying pathophysiology of the hernia and volvulus. Hiatal plasty effectively reduces the size of the diaphragmatic hiatus, thereby minimizing the risk of future herniation, while the Nissen fundoplication reinforces the gastroesophageal junction, providing a robust barrier against reflux and reherniation. This dual approach not only resolves the acute volvulus but also offers a durable solution, contributing to the patient's long-term symptomatic relief and improved quality of life.

In conclusion, this case highlights the vital role of surgical intervention in the management of complex hiatal hernias complicated by gastric volvulus. The combination of hiatal plasty and Nissen fundoplication should be considered a gold standard in the treatment of such cases, offering both immediate and lasting benefits. Future research should continue to explore the optimal surgical techniques and postoperative management strategies to further enhance patient outcomes in this challenging clinical scenario. This case also reinforces the need for heightened awareness among clinicians of the potential for volvulus in patients with hiatal hernias, advocating for prompt and decisive action to prevent the severe morbidity and mortality associated with this condition.

REFERENCES

I. Gastric volvulus: a potentially fatal cause of acute abdominal pain. Sleiwah A, Thomas G, Crawford I, Stanel A. BMJ Case Rep. 2017

II. A review article on gastric volvulus: a challenge to diagnosis and management. Rashid A, Thangarajah T, Mulvey D, Larvin M, Iftikhar AY. Int J Surg. 2010;8:18–24.

III. Volvulus. Bauman ZM, Evans CH. Surg Clin North Am. 2018;98:973–993.

IV. Acute gastric volvulus: diagnosis and management over 10 years. Gourgiotis S, Vougas V, Germanos S, Baratsis S. Dig Surg. 2006;23:169–172.

V. Acute gastric volvulus: a vicious twist of tummy-case report. Kumar B, Kalra T, Namdeo R, Soni RK, Sinha A. Int J Surg Case Rep. 2017;30:81–85.

VI. Acute gastric volvulus: a deadly but commonly forgotten complication of hiatal hernia. Imperatore K, Olivieri B, Vincentelli C. Autops Case Rep. 2016;6:21–26.

VII. Carter R., Brewer L.A., 3rd, Hinshaw D.B. Acute gastric volvulus: a study of 25 cases. Am. J. Surg. 1980;140(1):99–106

VIII. McElreath D.P., Olden K.W., Aduli F. Hiccups: a subtle sign in the clinical diagnosis of gastric volvulus and a review of the literature. Dig. Dis. Sci. 2008;53:3033–3036.

IX. Sinwar P.D. Gastric mesenteroaxial volvulus with partial eventration of left hemidiaphragm: a rare case report. Int. J. Surg. Case Rep. 2015;9:51–53.

X. Sevcik W.E., Steiner I.P. Acute gastric volvulus: case report and review of the literature. CJEM. 1999;1(3):200–203.

XI. Rashid F., Thangarajah T., Mulvey D., Larvin M., Iftikhar S.Y. A review article on gastric volvulus: a challenge to diagnosis and management. Int. J. Surg. 2010;8:18–24.

XII. Cardile A.P., Heppner D.S. Gastric volvulus, Borchardt's triad, and endoscopy: a rare twist. Hawaii Med. J. 2011;70(4):80–82