

# Gastric Volvulus in a 42 Year Old Male: A Case Report

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## Abstract

**Background:** Gastric volvulus is a rare clinical entity defined as an abnormal rotation of the stomach around itself beyond physiological range. The diagnosis is made very late as the clinical suspicion is low and mostly diagnosed on imaging or on the surgery table. The purpose of the study to reminding readers of this issue and emphasize the necessity for further research on how to deal with in the best way.

**Case Presentation:** A case of gastric volvulus in a 42 year old male, who presented with abdominal pain, persistent vomiting and retching- a late diagnosis was reached by Barium meal study, after repeated failure to navigate the stomach (Pyloric opening) in consecutive upper GI Endoscopies. Later surgical treatment cured the patient.

**Conclusion:** Although the symptoms like pain and vomiting are common in abdominal diseases and upper GI Endoscopy is a doorstep investigation even then the diagnosis is made late as the clinical suspicion of gastric volvulus is very infrequent. To orient the clinician we intend to report this case.

**Key words:** Barium meal Xray; CT Abdomen; Diagnostic delay; Gastric Volvulus; Surgery; Upper GI Endoscopy.

## INTRODUCTION

Gastric volvulus is defined as an abnormal rotation of the stomach around itself beyond physiological range.<sup>1</sup> The combination of pain, vomiting and inability to pass a nasogastric tube - known as the Borchardt's Triad is present in 70% of the cases with acute gastric volvulus.<sup>2</sup>

Gastric volvulus is classified pathophysiologically into two types: organoaxial (Long axis type) and mesentero axial (Short axis type). There is also a complex type in which both the types coexist. Etiologically, it is classified as primary and secondary. Most primary cases occur in childhood due to under-developed stomach or laxity of the ligaments of gastric fixation. On the other hand, about two thirds of adult cases are secondary and are caused by stomach lesions such as oesophageal hiatus hernia, diaphragmatic defect, gastric ulcer, gastric cancer, wandering spleen and so forth. To emphasize, wandering spleen is caused by acquired factors like weakening of the abdominal muscles and supporting ligaments following pregnancy or trauma.<sup>3</sup> In adults, the commonest association is with para-oesophageal hernia but traumatic defects, diaphragmatic eventration and phrenic nerve paralysis are known causes as well.

Gastric volvulus can lead to stomach strangulation, ischaemia and necrosis in severe cases, thus threatening life. Hence, prompt diagnosis and treatment is imperative but sadly, the diagnosis of gastric volvulus is challenging owing to its rarity, intermittency and non specificity of symptoms.<sup>3</sup> Diagnosis is conventionally achieved radiologically in patients with appropriate clinical findings.

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Plain radiographs are the first imaging modality in a suspected case where a plain X-ray of chest may show a mediastinal or retrocardiac air-fluid level and X-ray of the abdomen may show two air fluid level at the stomach antrum and fundus or a single air bubble with no additional luminal gas in the supine position and a “Beak” in the cardio-esophageal region.<sup>1,2</sup>

Any suggestive radiographic findings should be confirmed with a barium study which is highly sensitive, specific and the gold standard investigation.<sup>3</sup> Teague et al. reported that in a study including 36 patients with gastric volvulus, barium studies were helpful in 84% of the patients undergoing the procedure.<sup>7,4</sup>

Abdominal CT scan can also aid in diagnosing gastric volvulus, specially in a case associated with wandering spleen. It is particularly preferred over a barium in acutely ill patient who is unable to tolerate fluoroscopic examination and in visualizing other abdominal organs prior to a surgical approach.<sup>5</sup>

Endoscopy is unreliable as a diagnostic tool with a failure rate of approximately 68%. But can be used for excluding other possibilities and enabling decompression.<sup>3</sup>

Acute gastric volvulus is a surgical emergency and non-operative mortality is reported as high as 80% with an overall mortality figures of 30- 50%, where the major cause of death is strangulation, necrosis and perforation.<sup>6,7</sup>

The report on gastric volvulus from 2000- 2018 using Pub Med- only nine literatures were found.<sup>8</sup> In our country report on gastric volvulus is also scanty, that's why we report this case to sensitize our clinicians.

## CASE PRESENTATION

A 42 years aged wage earner at Dubai was admitted in unconscious state at a local hospital (Surgiscope Hospital (Pvt) Ltd, Chattogram) following a road traffic accident in the month of August 2022. After resuscitation, he was evaluated and adequately managed for fracture of right tibia and fibula. His chest X-ray and CT of brain were reported to be normal. After 7 days, he was discharged with a plaster cast on his right fractured leg. He was prescribed with protocolled doses of painkiller (Naproxen) and PPI along with medical advices. After 4 days of arriving to his native home (Bangladesh), he experienced intense upper abdominal pain and post-meal vomiting and retching. On consulting a local physician he was investigated with routine blood works, serum amylase and ultrasonography of abdomen which were all normal. Endoscopy of upper GI report was inconclusive. He was prescribed with I/V fluids, Tiemonium Methylsulphate (Anti-spasmodic) and PPI without any relief. Subsequently, he got admitted to a local private clinic of Chattogram. Physical examination revealed- vitals were normal, tender but soft abdomen and normal bowel sounds. Upper GI Endoscopy was repeated during which the pyloric opening could not be navigated after several attempts. Therefore, a Barium meal X-ray of stomach was asked for which suggested a gastric volvulus (Figure 1) Endoscopy picture of stomach (Figure 2). (Barium meal X-ray of the stomach). He was urgently referred

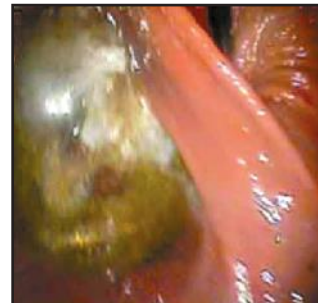
to the surgical team and was operated to correct the malrotation of stomach. His post operative recovery was uneventful and was discharged on 7<sup>th</sup> post operative day with advice and regular follow up visits to monitor progress.

## DISCUSSION

Presenting with vomiting and upper abdominal pain, this case of gastric volvulus turned out to be very interesting regarding its diagnostic journey. Despite its low incidence rate, the lack of critical and rational thinking can be held accountable for the diagnostic delay. Although in this case, chest X-ray was not repeated as it was found normal a few days back in Dubai, some diagnostic clues could have been traced in a chest X-ray if it was done after abdominal pain started.<sup>6</sup>

As gastric volvulus is an uncommon suspicion depending on its low prevalence and non-specific symptoms, the ambiguity in the first endoscopic attempt did not arise the intuition of the diagnosis. However, failure in the next attempt did provoke a Barium meal study which satisfied the surgical team and bypassed the need for a CT Abdomen.<sup>1</sup>

Emergency laparotomy remains the most common surgical approach for gastric volvulus.<sup>2</sup> Alternatively, laparoscopic interventions are increasingly being practiced depending on patient's clinical condition, institutional availability and surgeon expertise.<sup>2,4,8</sup> The goal of surgery include detorsion and fixation (Gastropexy) of the stomach to prevent recurrence.<sup>9</sup> The entire procedure was successfully done in our patient. The cause of gastric volvulus in this case was not mentioned, post trauma may be a speculation.



**Figure 1 :** Endoscopy of the stomach



**Figure 2 :** Barium meal X-ray of the stomach

## CONCLUSION

Gastric Volvulus is undoubtedly an unusual case to be witnessed in daily clinical practice and easily skipped in routine examination but a missed diagnosis can cost life. Therefore, it is advisable that it stays as a differential in the clinician's mind, especially during upper GI Endoscopy. Failure to see the pyloric opening is a clue finding and should lead to subsequent imaging like Barium study and / or CT abdomen. Inability to introduce naso gastric tube which coils up in esophagus is another pointer. Timely surgical intervention can prevent complications and improve outcome associated with gastric volvulus.

## DISCLOSURE

All the authors declared no competing interest.

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