Acute organoaxial gastric volvulus

James Heaton, Andrew Gilliam

ABSTRACT

Abstract is not required for Clinical Images
A 73-year-old male presented to the emergency department with a one-day history of severe epigastric pain with vomiting progressing to dry retching. He admitted to a long history of esophageal reflux symptoms treated with oral omeprazole. His initial examination revealed a tachycardia and a swollen, tender epigastrium but no other signs of note. A nasogastric tube was passed with difficulty, he was made nil by mouth and treated with intravenous crystalloids. Laboratory blood results were unremarkable including normal amylase and liver function tests.

A chest X-ray showed a large retrocardiac viscus reported as a large hiatus hernia while his abdominal film demonstrated a paucity of bowel gas (Figure 1). An abdominal and thoracic computed tomography (CT) scan revealed a moderate hiatus hernia without obvious perforation and the possible appearance of a rotational component of the stomach with dilatation to the pylorus and no fluid beyond this point. A subsequent upper gastrointestinal contrast study clearly demonstrated an ‘upside-down stomach’ sign and established the diagnosis of an obstructing organoaxial volvulus secondary to a paraesophageal hiatus hernia (Figure 2) [1]. On transfer to our facility the patient went on to have definitive laparoscopic gastropexy surgery involving reduction of...
the volvulus, excision of the hernia sac, re-approximation of the diaphragmatic crura then placement of four sutures anchoring the greater curvature of the stomach to the abdominal wall. He has had no recurrence of the volvulus and was symptom free when followed-up in clinic for six months.

DISCUSSION

Gastric volvulus is an abnormal rotation of the stomach through more than 180 degrees, first described by Berti in 1866 [2]. This can lead to ulceration, perforation, hemorrhage, ischemia or necrosis [1]. The non-operative mortality rate is as high as 80% [3].

Adults with acute gastric volvulus typically present with epigastric pain and distension, unproductive vomiting and difficulty with nasogastric tube insertion. A constellation known as Borchardt’s triad [4]. About 10–20% of cases occur in children, in adults it can occur at any age but is more common after the fourth decade of life [1, 5].

Gastric volvulus can be classified according to the axis around which the stomach rotates. In organoaxial volvulus, the stomach rotates around an axis connecting the gastroesophageal junction with the pylorus. This is the most common type of gastric volvulus occurring in approximately 60% of cases and commonly leads to strangulation and necrosis [6]. In mesenteroaxial volvulus, there is a transverse axis and the antrum rotates antero-superiorly so that the posterior surface of the stomach lies anteriorly. It is also possible to have a combined type volvulus. The most common causes of gastric volvulus in adults are diaphragmatic defects. In the case of paraesophageal hernia related volvulus, as we report, the gastroesophageal junction remains in the abdomen, whereas the stomach ascends adjacent to the esophagus, resulting in a horizontally lying, upside down stomach [2].

X-ray appearances include a retrocardiac gas/fluid filled viscus on chest film if the stomach is in the thorax and a paucity of distal gas on plain abdominal film [7]. Several authors recommend computed tomography imaging as the diagnostic method of choice, this may show a torted bi-lobular stomach with a transition line [2, 8, 9]. However, the diagnosis of gastric volvulus is classically based on upper gastrointestinal contrast studies using barium or Gastrografin. These studies are both sensitive and specific if performed in the twisted state and classically show an ‘upside-down stomach’ sign as well as illustrating the degree of obstruction [8].

Endoscopic reduction of gastric volvuli is possible but recurrence rates are high if this is performed as an isolated procedure [2]. Surgical repair was traditionally based on an open approach but this has been superseded by modern minimally invasive techniques. Laparoscopic suture gastropexy, as described in our case, is safe and effective for both acute and chronic gastric volvulus [1-3].

CONCLUSION

Acute gastric volvulus is a rare surgical emergency with high rates of non-operative mortality. Prompt diagnosis and urgent surgery is crucial to avoid life-threatening complications associated with this condition. A purely clinical diagnosis is challenging but the condition should be suspected in a patient who presents with abdominal pain and distension, unproductive vomiting and a difficult to place nasogastric tube. Although a computed tomography scan may prove useful our case report clearly demonstrates the power of upper gastrointestinal contrast studies in establishing a definitive diagnosis.

How to cite this article
Heaton J, Gilliam A. Acute organoaxial gastric volvulus. Int J Case Rep Images 2015;6(2):124–126.
doi:10.5348/ijcri-201507-CL-10062

Author Contributions
James Heaton – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Final approval of the version to be published
Andrew Gilliam – Acquisition of data, Analysis and interpretation of data, Drafting of the article, Final approval of the version to be published

Guarantor
The corresponding author is the guarantor of submission.

Conflict of Interest
Authors declare no conflict of interest.

Copyright
© 2015 James Heaton et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.

REFERENCES
1. Channer LT, Squires GT, Price PD. Laparoscopic repair of gastric volvulus. JSLS 2000 Jul-Sep;4(3):225–30.
2. Morelli U, Bravetti M, Ronca P, et al. Laparoscopic anterior gastropexy for chronic recurrent gastric volvulus: A case report. J Med Case Rep 2008 Jul 24;2:244.
3. Palanivelu C, Rangarajan M, Shetty AR, Senthilkumar R. Laparoscopic suture gastropexy for gastric volvulus: A report of 14 cases. Surg Endosc 2007 Jun;21(6):863–6.
4. Borchardt M. Aus Pathologie und therapie des magenvolvulus. Arch Klin Chir 1904;74:243.
5. Harford WV, McArthur KE. Diverticula, hernias, volvulus, and rupture. Gastrointestinal Disease: Pathophysiology, Diagnosis, Management. 5th ed. Philadelphia, Pa: Saunders;1993:481-3.
6. Milne LW, Hunter JJ, Anshus JS, Rosen P. Gastric volvulus: Two cases and a review of the literature. J Emerg Med 1994 May-Jun;12(3):299–306.
7. Sevcik WE, Steiner IP. Acute gastric volvulus: case report and review of the literature. CJEM 1999 Oct;1(3):200–3.
8. Woon CY, Chung AY, Low AS, Wong WK. Delayed diagnosis of intermittent mesenteroaxial volvulus of the stomach by computed tomography: A case report. J Med Case Rep 2008 Nov 11;2:343.
9. Ahmed A. Acute mesenteroaxial gastric volvulus on computed tomography. S Afr J Rad. 2013;17(1):21–3.
Edorium Journals: An introduction

Edorium Journals Team

About Edorium Journals
Edorium Journals is a publisher of high-quality, open access, international scholarly journals covering subjects in basic sciences and clinical specialties and subspecialties.

Invitation for article submission
We sincerely invite you to submit your valuable research for publication to Edorium Journals.

But why should you publish with Edorium Journals?
In less than 10 words - we give you what no one does.

Vision of being the best
We have the vision of making our journals the best and the most authoritative journals in their respective specialties. We are working towards this goal every day of every week of every month of every year.

Exceptional services
We care for you, your work and your time. Our efficient, personalized and courteous services are a testimony to this.

Editorial Review
All manuscripts submitted to Edorium Journals undergo pre-processing review, first editorial review, peer review, second editorial review and finally third editorial review.

Peer Review
All manuscripts submitted to Edorium Journals undergo anonymous, double-blind, external peer review.

Early View version
Early View version of your manuscript will be published in the journal within 72 hours of final acceptance.

Manuscript status
From submission to publication of your article you will get regular updates (minimum six times) about status of your manuscripts directly in your email.

Our Commitment

Six weeks
You will get first decision on your manuscript within six weeks (42 days) of submission. If we fail to honor this by even one day, we will publish your manuscript free of charge.

Four weeks
After we receive page proofs, your manuscript will be published in the journal within four weeks (31 days). If we fail to honor this by even one day, we will publish your manuscript free of charge and refund you the full article publication charges you paid for your manuscript.

Mentored Review Articles (MRA)
Our academic program “Mentored Review Article” (MRA) gives you a unique opportunity to publish papers under mentorship of international faculty. These articles are published free of charges.

Favored Author program
One email is all it takes to become our favored author. You will not only get fee waivers but also get information and insights about scholarly publishing.

Institutional Membership program
Join our Institutional Memberships program and help scholars from your institute make their research accessible to all and save thousands of dollars in fees make their research accessible to all.

Our presence
We have some of the best designed publication formats. Our websites are very user friendly and enable you to do your work very easily with no hassle.

Something more...
We request you to have a look at our website to know more about us and our services.

We welcome you to interact with us, share with us, join us and of course publish with us.

CONNECT WITH US

Edorium Journals: On Web
Browse Journals

This page is not a part of the published article. This page is an introduction to Edorium Journals and the publication services.