

# Chronic Recurrent Vomiting Associated with Primary Gastric Volvulus in Infant: A Case Report and Review of Literature

Maheshkumar Manilal Vaghela, Amit Kumar Sinha, Bindey Kumar, Prem Kumar<sup>1</sup>

Departments of Paediatric Surgery and <sup>1</sup>Radiology, AIIMS, Patna, Bihar, India

## Abstract

Gastric volvulus is an uncommon entity found in the paediatric population. We are reporting a case of chronic gastric volvulus presented to us with the complaints of recurrent vomiting after each feed. The vomiting was projectile, nonbilious, and the content was milk. The patient was evaluated by clinical and radiological means in the form of the X-ray abdomen, ultrasound abdomen, upper gastrointestinal (GI) contrast study, and computed tomography scan of the abdomen. The upper GI contrast study was suggestive of gastric volvulus. The patient was operated and gastropexy was done. There was lax gastrocolic ligament with increased distance between stomach and transverse colon without any obvious gastric volvulus. Postsurgery, the patient was symptom-free.

**Keywords:** Gastric volvulus, gastropexy, recurrent vomiting

## INTRODUCTION

Gastric volvulus in the paediatric population is an uncommon entity.<sup>[1]</sup> It is defined as the abnormal rotation of the stomach over 180° to its longitudinal or transverse axis.<sup>[2]</sup> There are three types of the gastric volvulus depending on its axis of rotation. These are, namely organoaxial, mesentericoaxial, and combined mesenterico-organo-axial.<sup>[3,4]</sup> It is mainly represented in acute condition as acute abdomen but sometimes represented in the form of chronic recurrent vomiting. The diagnosis mainly depends on the clinical suspicion and investigations like X-ray abdomen, ultrasonography, computed tomography (CT) scan, and upper gastrointestinal (GI) contrast study. The surgical intervention is required in the form of gastropexy with or without gastrostomy. We are reporting a case of 4-month-old female child with the features of chronic gastric volvulus.

## CASE REPORT

A 4-month-old female child, full-term delivery, with antenatal supervision was presented to us with the complaints of vomiting after 20–30 min of each feed since 1 month of age. Vomiting was projectile, nonbilious, and milk as content. Frequency of the vomiting was increasing gradually, so the patient was brought to us in emergency outpatient department. The patient was admitted and evaluated. On clinical examination,

the patient was stable with normal milestones. Abdominal examination showed no obvious abnormality. Per rectal



**Figure 1:** Upper gastrointestinal contrast study showing gastric volvulus

**Address for correspondence:** Dr. Amit Kumar Sinha,  
Department of Paediatric Surgery, AIIMS, Patna, Bihar, India.  
E-mail: dr\_amits@yahoo.com

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

**For reprints contact:** reprints@medknow.com

**How to cite this article:** Vaghela MM, Sinha AK, Kumar B, Kumar P. Chronic recurrent vomiting associated with primary gastric volvulus in infant: A case report and review of literature. Afr J Paediatr Surg 2017;14:12-4.

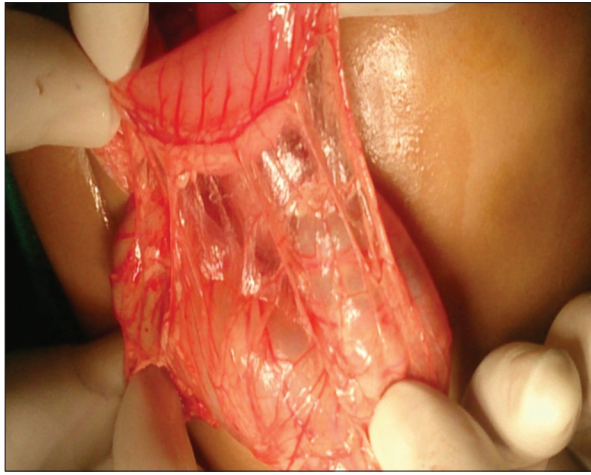
### Access this article online

#### Quick Response Code:



**Website:**  
www.afjpaedsurg.org

**DOI:**  
10.4103/ajps.AJPS\_36\_16



**Figure 2:** Showing lax gastrocolic ligament

examination was normal. Laboratory tests were within normal limits. On X-ray abdomen, normal bowel gas pattern was seen. No obvious abnormality detected on ultrasonography. CT scan was performed but could not make out the proper diagnosis, so the patient was undergone for upper GI contrast study which was suggestive of gastric volvulus [Figure 1]. The patient was initially resuscitated and posted for surgery. In dorsal recumbent position, the abdomen was opened with midline incision and stomach was delivered. There was lax gastrocolic ligament with increasing distance between stomach and transverse colon without obvious gastric volvulus [Figure 2]. No abnormality was detected in the diaphragm and other abdominal organ. The gastropexy was done by fixing stomach to the left side of anterior abdominal wall with three interrupted nonabsorbable silk sutures at fundus, body, and pyloric antrum. Postoperatively, the patient was stable for 24 h then she developed ventricular tachycardia and managed conservatively. In the next 48 h, she had episode of convulsion so required anticonvulsant medication. On the view of above-unexpected event, the patient was allowed orally on the 5<sup>th</sup> postoperative day. The feeding was tolerated very well and made to full oral feed within 3 days without any episode of vomiting. The patient was discharged in stable condition.

## DISCUSSION

Gastric volvulus was reported in paediatric population, but cases are less common as compared to adults. The first case of gastric volvulus was reported in paediatric patient by Oltmann.<sup>[2,3]</sup> Singleton classified gastric volvulus into organoaxial, mesentericoaxial, and mixed type in 1940.<sup>[2]</sup> Most of the reports in paediatric as well as adult patients are concerned with the secondary volvulus with diaphragmatic hernia.<sup>[5]</sup> The most common secondary causes were hiatus hernia then eventration of the diaphragm. Very few cases of primary gastric volvulus are reported. The primary volvulus is more common in adults compared to paediatric patients. The cause of primary volvulus is idiopathic and mainly suspected due to laxity of the gastric ligaments. The secondary

gastric volvulus is mainly due to anatomical abnormalities in the stomach or surrounding organs such as the liver, spleen, transverse colon, and diaphragm.<sup>[4]</sup>

The patient may represent with acute condition in the form of unproductive retching, abdominal distension, and difficulty or inability to insert nasogastric tube. In secondary volvulus, respiratory symptoms such as chronic cough, apnea, and wheezing delays the diagnosis.<sup>[2,5]</sup> Abdominal X-ray can demonstrate gastric volvulus showing gastric distension or double bubble sign.<sup>[6,7]</sup> The ultrasonography may show distended stomach or rotational abnormality of gastric volvulus. Ultrasonography is useful as screening test and to rule out other abdominal pathology. The upper GI contrast study is diagnostic. It will show volvulus as per type with delayed gastric emptying. The CT scan is useful in doubtful cases showing dilated stomach with gastric air-fluid level and volvulus. The magnetic resonance imaging can be used in place of the CT scan for gastric volvulus and detecting other abnormality.

In our case, abdominal X-ray was normal. Ultrasonography was suggestive of distended stomach without other abnormality. The CT scan was showing distended stomach with air-fluid level. The upper GI contrast study was showing organoaxial volvulus.

Management of gastric volvulus is mainly surgical for both acute and chronic type. The secondary gastric volvulus always requires surgery. In the primary variety, due to its chronic nature, some cases can be tried by medical management.<sup>[8]</sup> Open as well as laparoscopic approaches are used for surgery.<sup>[9,10]</sup> The principle of surgery is reduction of volvulus and treatment of predisposing factors with fixation of stomach to the anterior abdominal wall (gastropexy). In our case, we found lax and wide gastrocolic ligament without other abnormality. We did anterior gastropexy. There was no postoperative surgical complication.

## CONCLUSION

Primary gastric volvulus is a very rare entity in paediatric patients. Due to the rarity of this condition, the children with recurrent vomiting, especially nonbilious should be suspected for gastric volvulus as a one of the important differential diagnosis. The patient should be evaluated early by available diagnostic tests. The early diagnosis is necessary to prevent complication and better outcome.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Cribbs RK, Gow KW, Wulkan ML. Gastric volvulus in infants and children. *Pediatrics* 2008;122:e752-62.
2. Darani A, Mendoza-Sagaon M, Reinberg O. Gastric volvulus in children. *J Pediatr Surg* 2005;40:855-8.
3. Singleton AC. Chronic gastric volvulus. *Radiology* 1940;34:53-61.
4. Anaya-Ayala JE, Naik-Mathuria B, Olutoye OO. Delayed presentation of congenital diaphragmatic hernia manifesting as combined-type acute gastric volvulus: A case report and review of the literature. *J Pediatr Surg* 2008;43:E35-9.
5. McIntyre RC Jr., Bensard DD, Karrer FM, Hall RJ, Lilly JR. The pediatric diaphragm in acute gastric volvulus. *J Am Coll Surg* 1994;178:234-8.
6. Cameron AE, Howard ER. Gastric volvulus in childhood. *J Pediatr Surg* 1987;22:944-7.
7. Teague WJ, Ackroyd R, Watson DI, Devitt PG. Changing patterns in the management of gastric volvulus over 14 years. *Br J Surg* 2000;87:358-61.
8. Al-Salem AH. Acute and chronic gastric volvulus in infants and children: Who should be treated surgically? *Pediatr Surg Int* 2007;23:1095-9.
9. Shah A, Shah AV. Laparoscopic gastropexy in a neonate for acute gastric volvulus. *Pediatr Surg Int* 2003;19:217-9.
10. Singal AK, Patel R, Jain S, Gavhane J, Kadam NN. Laparoscopic management of neonatal gastric volvulus: A case report and review of the literature. *Eur J Pediatr Surg* 2009;19:191-3.