

## *Idiopathic and chronic Organo-axial gastric Volvulus, duodenal Ulcer and Haematemesis*

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### Summary

Olanrewaju DA and Renner JK. Idiopathic and chronic Organo-axial gastric Volvulus, duodenal Ulcer and Haematemesis. *Nigerian Journal of Paediatrics* 1994; 21:59. The clinical features and the findings from barium meal studies undertaken in a six-year old female child with haematemesis and malaena stools are presented. The barium meal studies revealed an idiopathic, chronic and asymptomatic organo-axial gastric volvulus and duodenal ulcer. A past medical history of severe burns and haematemesis and a recent oral ingestion of acetylsalicylic acid that was administered by the parents, appeared to have been the causative factors in the peptic ulceration. It is speculated that with the abnormal 'upside-down' stomach facilitating down-pouring of peptic acid juice on the duodenum, the ulcer became chronic.

### Introduction

GASTRIC volvulus, an abnormal rotation of the stomach, may be acute or chronic, symptomatic or asymptomatic, idiopathic or secondary; this rare condition occurs in all ages and in both sexes with a slight female preponderance.<sup>1</sup> Volvulus refers to the twisting of the longitudinal axis of the stomach with partial or complete obstruction of its lumen, while torsion refers to the twisting but with-

out luminal obstruction. Three anatomical types of volvulus are recognized and these include organo-axial volvulus which means a long-axis (cardio-pyloric) rotation, organo-mesenteric volvulus in which there is twisting from the centre of the stomach's big curvature to the hepato-portal junction, while organo-mesenteric-axial volvulus (or mixed) is a combination of the two.<sup>2-5</sup> Because of vascular strangulation, an acute volvulus is a surgical emergency, but chronic gastric volvulus may present with non-specific symptoms such as abdominal discomfort, vomiting or weight loss. The present communication concerning a child with organo-axial type of volvulus, duodenal ul-

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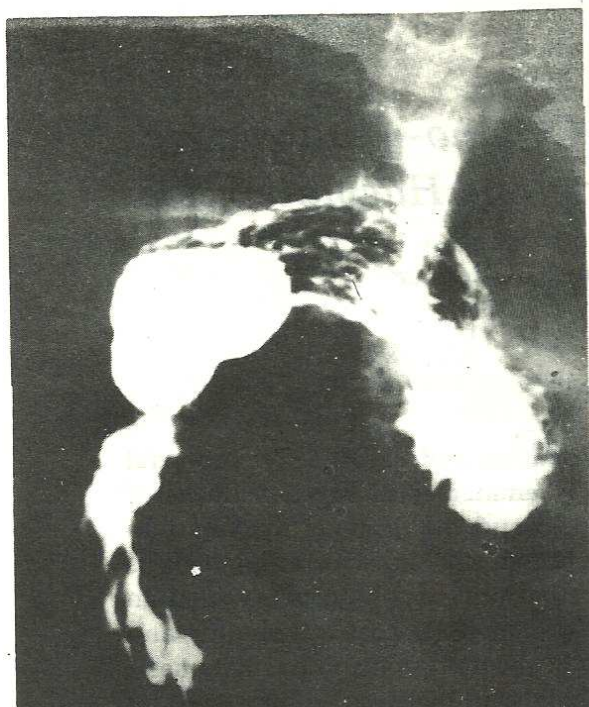


Fig 1: Barium meal showing organo-axial volvulus. Note the free flow of barium from the oesophagus to the stomach.

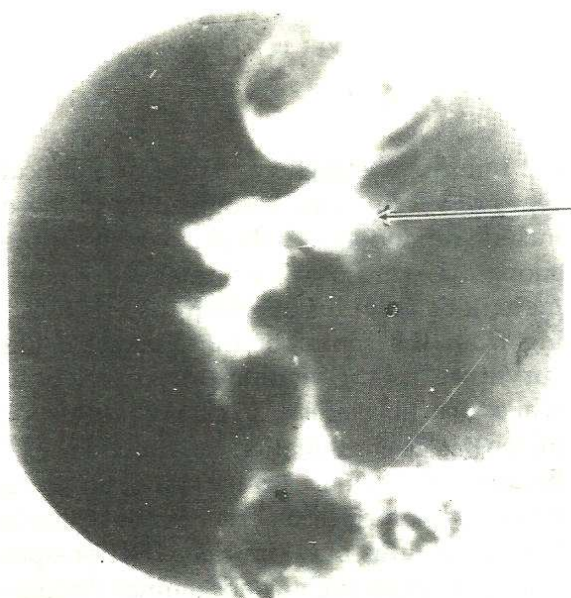


Fig 2: Barium meal (coned-down view) showing an ulcer in a chronically deformed duodenal bulb (arrow).

cer and haematemesis, is reported because of the rarity of volvulus in childhood.<sup>2 5</sup>

### Case Report

OJ, a 6-year old female was referred to the children's emergency unit, Lagos University Teaching Hospital (LUTH), on account of haematemesis. Prior to presentation, the patient had developed a high grade fever for which she was treated with *Phensic* and chloroquine. On the second day of the illness, she vomited copious amount of blood, three times and was subsequently referred to LUTH. While being examined in LUTH, she had two bouts of haematemesis. There was no history of haematuria, haematochezia or spontaneous cutaneous bleeding. The quantity of *Phensic* ingested was not documented. Past medical history revealed occurrence of haematemesis complicating burns, six months before presentation. Examination showed a lethargic, mildly pale and afebrile child. There was no jaundice or petechiae. Pulse rate was 140/min and of good volume. The spleen was palpable, 6cm below the left costal margin and rectal examination revealed malaena stool.

Haemoglobin was 9.7gm/dl at presentation and blood group was O<sup>+</sup>. Two barium meal studies were undertaken at seven weeks interval and these demonstrated organo-axial gastric volvulus (Fig 1) and an acute - on - chronic duodenal ulcer (Fig 2), respectively. At both studies, free flow of barium was demonstrated from the oesophagus to the stomach; thus, there was no obstruction in the gastric lumen. No other intra-abdominal abnormality was present.

## Discussion

Since Berti<sup>3</sup> first described organo-axial volvulus in 1866, a review of the English literature has revealed 357 reported cases, excluding the present case.<sup>4-10</sup> Predisposing factors in gastric volvulus include associated diaphragmatic eventration, oesophageal hiatus, Bochdalek hernia, attenuation of stomach anchors (gastro-splenic and gastro-hepatic ligaments) and congenital bands and adhesions. As many as 87.5 percent of the adult patients reported by Wastell and Ellis,<sup>5</sup> had resulted from para-oesophageal hernia and only 12.5 percent was due to omental traction. In the series comprising children and reviewed by Miller *et al*,<sup>2</sup> 94 percent had associated anatomic defects of which diaphragmatic abnormalities were the commonest, followed by gastric ligaments, congenital bands and adhesions, and miscellany of minor congenital defects, including pyloric stenosis, splenism and rectal atresia. Of the 53 adult cases with massive hiatal hernia reported by Pearson *et al*,<sup>6</sup> 45.3 percent had associated organo-axial volvulus. It should be noted that no associated anomaly occurred in the present case. Organo-axial gastric volvulus is reported to be the commonest in adults,<sup>5</sup> while mesentero-axial volvulus is commonest in children.<sup>2</sup> By contrast, the type of volvulus in the present case was organo-axial.<sup>3</sup>

Gastric volvulus commonly presents with abdominal pain, belching, distension, retrosternal pain, respiratory distress and weight loss. Diagnostic difficulty may thus arise when, as in the present case, it presents with haematemesis due to the associated ulcer. It was this rare presentation of haematemesis that informed the choice of the barium meal studies which revealed the unsuspected "upside-down" stomach.<sup>10</sup> Three adult cases of this abnormality

presenting with haematemesis caused by congested mucosa in gastric stasis have been reported.<sup>5-9</sup>

The blood group of our patient was O Rh positive and among this group, proneness to peptic ulceration is well established.<sup>11</sup> Thus, ulcer in our patient may have been multifactorial - genetic, ulcerogenic drug (*Phensic*) ingestion and stress (burns) that occurred six months prior to presentation at the hospital. The chronicity of the ulcer was probably facilitated by the down-pour of the peptic acid juice into the duodenum of the "upside-down" stomach.<sup>10</sup> Gastric volvulus is termed *idiopathic* when there is no associated abnormality or disease within the abdominal cavity; it is termed *secondary* when it is associated with intra-abdominal abnormality.<sup>5</sup> The present case was thus *idiopathic*, as no associated intra-abdominal abnormality was demonstrated.

## References

- 1 Singleton AC. Chronic gastric volvulus. *Radiology* 1940; **34**: 53-64.
- 2 Miller DL, Pasquale MD, Seneca RP and Hodin E. Gastric volvulus in the paediatric population. *Arch Surg* 1991; **126**: 1146-9.
- 3 Berti A. Singolare attortigliamento dell'esofago col duodeno sequi to da rapida morte. *Gazz Med Ital Prov Ver* 1866; **9**: 139.
- 4 Dalgaard JB. Volvulus of the stomach: Case report and survey. *Acta Chir Scand* 1952; **103**: 131-53.
- 5 Wastell C and Ellis H. Volvulus of the stomach - a review with a report of 8 cases. *Br J Surg* 1971; **58**: 557-62.
- 6 Pearson FG, Cooper JD, Ilves R, Todd TR and Jamieson WR. Massive hiatal hernia with incarceration: A report of 53 cases. *Ann Thorac Surg* 1983; **35**: 45-51.
- 7 Honna T, Kamii Y and Tsuchida Y. Idiopathic gastric volvulus in infancy and childhood. *J Pediatr Surg* 1990; **25**: 707-10.
- 8 Idowu J, Aitken DR and Georgeson KE. Gastric volvulus in the newborn. *Arch Surg* 1980; **115**: 1046-9.
- 9 Bhasin DK, Nagi B, Kochhar R, Gupta NM and Mehta SK. Haematemesis: a rare presentation

- of gastric volvulus. *Indian J Gastroenterol* 1990; 9: 93.
- 10 Mizzahi S, Vinograd I and Schiller M. Neonatal gastric volvulus secondary to rectal atresia. *Clin Pediatr* 1988; 27: 302-4.
- 11 Silen W. Peptic ulcer. In: Harrison's Principles of Internal Medicine. Thorn, Adams, Braunwald, Isselbacher and Petersdorf, eds USA Blakiston Publication 1977: 1494-1510.