

## Intermittent abdominal distension as a form of presentation of chronic gastric volvulus<sup>☆</sup>

### Distensión abdominal intermitente como forma de presentación de vólvulo gástrico crónico

To the Editor:

Gastric volvulus is a torsion of at least 180° of the stomach or part of it around its short or long axis that generates varying degrees of outlet and blood flow obstruction. Its incidence peaks at the fifth decade of life, and it is rare in the paediatric age group (most of these cases occur in children younger than 2 years).<sup>1</sup>

We present 2 cases of chronic gastric volvulus. The first one corresponds to a 5-year-old boy with no underlying disease that came to the emergency department for a second opinion on episodes of intermittent abdominal distension over the course of 1 month. The physical examination was normal except for a mildly distended abdomen with tympanic bowel sounds. A barium transit study was performed on an outpatient basis, the results of which were normal. A few hours later the patient had an episode of abdominal distension and the abdominal radiograph revealed features compatible with gastric volvulus (Fig. 1). Based on these findings, a nasogastric tube was inserted and a laparoscopic surgery performed, revealing a loose gastrocolic ligament that allowed a complete organoaxial gastric volvulus. A phrenofundopexy (fixation of the stomach to the diaphragm) and an anterior gastropexy (fixation of the stomach to the anterior abdominal wall) were performed. The patient had a favourable outcome.

The second case involved a 3-year-old boy seen at the emergency room for daily episodes of abdominal pain the course is 2 months but vomiting, were only in the last days. The examination only revealed distension of the top half of the abdomen with marked tympanic sounds. Gastric volvulus was suspected and an abdominal radiograph done (Fig. 2) that confirmed it. A nasogastric tube was inserted and a fundal and anterior gastropexy performed. The patient had a favourable outcome.

Depending on its clinical presentation, gastric volvulus can be classified as acute or as chronic or recurrent (up to 57% of cases, according to Cribbs et al.).<sup>1</sup> Up to 70% of acute cases and 30% of chronic cases are secondary to other diseases,<sup>1,2</sup> such as anatomical or functional abnormalities of the stomach or the adjacent organs, especially diaphragmatic hernia.

Acute gastric volvulus may present with Borchartd's triad, which is usually not found in full in children,<sup>1,2</sup> consisting of epigastric pain with distension, severe non-



**Figure 1** Case 1, marked gastric distension that did not extend to other parts of the digestive tract, with barium remnants from the previous study.

productive retching, and inability to pass a nasogastric tube. Up to 75%<sup>1</sup> of acute cases present with nonbilious vomiting; less frequent symptoms include haematemesis, respiratory distress, apnea, ischaemia, gastric perforation, or shock, and the condition is fatal in 6.7% of cases (Cribbs et al.). Meanwhile, the manifestations of chronic volvulus are more nonspecific and vary according to the degree of rotation and obstruction. They may include nonbilious vomiting (71%<sup>1</sup>), epigastric pain or distension, failure to thrive, gastro-oesophageal reflux, aerophagia, and colic, and the mortality rate is 3%.<sup>1</sup> Due to the variability of its clinical features, chronic gastric volvulus may be underdiagnosed with potentially deleterious consequences, as it may become acute in up to 12.5% of cases, with up to 60% of the latter requiring initial resuscitation.<sup>1</sup>

The diagnosis is usually made by an abdominal radiograph and an upper gastrointestinal series,<sup>3</sup> although the results of these studies may be normal.<sup>4</sup> Thus, other imaging techniques, such as CAT, may be required if there is a high clinical suspicion and the previously mentioned studies are all normal. Depending on the axis of rotation, the volvulus is classified as organoaxial (54% of acute cases and 85% of chronic cases),<sup>1</sup> mesenteroaxial (41% of acute and 10% of chronic cases),<sup>1</sup> or combined.<sup>5</sup> The findings may include gross gastric distension, abnormal position of the stomach, and two air-fluid levels in imaging studies with a "bird's beak appearance" at the esophagogastric junction, among others. In organoaxial volvulus, the stomach lies on a horizontal plane with the greater curvature superior to the

<sup>☆</sup> Please cite this article as: Manrique Martín G, Míguez Navarro C, Corona Bellostas C. Distensión abdominal intermitente como forma de presentación de vólvulo gástrico crónico. *An Pediatr (Barc)*. 2015;82:106–107.



**Figure 2** Case 2, gross gastric distension with stomach lying on a horizontal plane, compatible with gastric volvulus.

lesser curvature. In mesenteroaxial volvulus, the gastroduodenal junction is superior to the oesophagogastric junction, and the stomach plane is vertical and has a spherical appearance.

Other causes of gastric distension include duodenal atresia, superior mesenteric artery syndrome, preduodenal portal vein, neoplasias, intense crying and gastroparesis, the latter of which may be due to a variety of aetiologies (connective tissue diseases, myopathies, neuropathies, degenerative diseases of the central or autonomous nervous system, endocrinopathies, and pharmacological).

Acute gastric volvulus is a surgical emergency, as it has an associated mortality of up to 80% if surgery is delayed.<sup>6</sup> However, in chronic or intermittent volvulus, while surgery is the treatment preferred by most authors (it can confirm the diagnosis and treat it at the same time),<sup>1,3-5</sup> others claim that it could be managed conservatively with postural treatment. Usually, the chosen surgical modality is laparoscopy, reducing the volvulus, correcting the factors that promote its development, and fixing the stomach to the adjacent structures.

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28 June 2014 25 August 2014