Case report

MESENTEOAXIAL GASTRIC VOLVULUS WITH DIAPHRAGMATIC HERNIA PRESENTING WITH CHRONIC VOMITING AND ABDOMINAL DISTENSION:
A CASE REPORT

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Abstract

Although regurgitation or vomiting can be a functional GI disorder during infancy, patients should be spontaneously resolved before 18 months of age. Thus, children with chronic vomiting, particularly in association with poor weight gain, should be considered for investigation of any possible of intestinal obstruction. Herein, we report a child, presenting with chronic non-bilious vomiting, abdominal distension, and failure to thrive, who had been treated initially as GERD and was diagnosed finally as gastric volvulus with diaphragmatic hernia. Chiang Mai Medical Journal 2009;48(1):31-34.

Keywords: Gastric volvulus, diaphragmatic hernia, gut obstruction, chronic vomiting

A 27-month-old girl, born to a term-uneventful pregnancy, had presented with chronic non-bilious vomiting, abdominal distension, and first degree malnutrition for 2 months. She was treated as gastroesophageal reflux with antiemetic and antisecretory agents without clinical improvement. Prior to this illness, she was doing well. Neither history of trauma nor surgery was noted. On physical examination, the patient looked sick with moderate dehydration. Besides decreased breath sound at the left lower lung field and upper abdominal distension, which disappeared after nasogastric tube decompression, other examinations were normal. An initial gastric content contained no bile with a volume of 25 ml. Basic laboratory investigations included CBC: hemoglobin 13.4 g/dL, WBC 6400/mm³, Platelet count 471,000/mm³, BUN 16 mg/dL, Cr 0.6 mg/dL, Na 139 mmol/L, K 3.6 mmol/L, Cl 87 mmol/L, and CO₂CP 21 mmol/L. The liver function tests were normal. A chest x-ray showed elevation of the left diaphragm, whereas a large fluid-filled soft tissue density with an air-fluid level was noted at the upper abdomen on a plain abdominal film (Fig. 1). According to the x-rays, the patient was initially diagnosed as
intestinal malrotation with eventration of the diaphragm.

An upper GI study was subsequently performed and it revealed mesenteroaxial gastric volvulus, causing partial gastric outlet obstruction with normal position of the gastroesophageal junction (Fig. 2). Consequently, the patient underwent exploratory laparotomy. In accordance with the upper-GI study, the mesenteroaxial gastric volvulus was noted intraoperatively, in the absence of the gastrohepatic ligament. At the operation, the Bockdalek diaphragmatic hernia, with intact hernial sac, was also observed. Hernial repair and anterior gastroprexy were performed. Postoperatively, the

**Figure 1.** Chest X-ray and plain abdominal film showing elevation of the left diaphragm, and a large fluid-filled soft tissue density with an air-fluid level.

**Figure 2.** Upper GI study showing mesenteroaxial gastric volvulus.
Gastric volvulus with diaphragmatic hernia

Gastric volvulus with diaphragmatic hernia 33
total parenteral nutrition was started with
gradual clinical improvement. The patient
could be fully fed enterally in the second
week post operation. At the four-week
follow up, she had gained 1.5-kg in weight
and was doing well.

Discussion
Gastric volvulus was firstly described by
Berti in 1866(1,2) and was thought to be rela-
tively rare in the newborn and infancy period.
Based on the axis around which the stomach
rotates, this condition is mainly classified
as an organoaxial, a mesenteroaxial, and
combined type.(3,4) The organoaxial gastric
volvulus is the most common type found in
both children and adults.(3) It is frequently
associated with diaphragmatic defects (43%).
Additionally, absence or abnormal attach-
ment of gastric ligaments, intestinal obstruc-
tion from adhesion, pyloric stenosis, small
and large bowel malformation, and asplenis
were also associated with the development of
gastric volvulus.(3)

Our patient presented as a chronic form,
which usually manifests as repetitive
episodes of abdominal pain and vomiting.
However, some patients may develop an
acute episode of severe abdominal pain with
ischemic necrosis of the stomach, which, if
not recognized and treated promptly,(5) leads
to shock and death.(6) Therefore, a high index
of suspicion is very crucial for establishing
proper diagnostic investigations and treat-
ment. Distended gastric bubble with eleva-
tion of the left diaphragm on a plain radi-
graph indicates the possibility of gastric
volvulus and diaphragmatic defects.(3) The
diagnosis can be confirmed by an upper GI
contrast, study, revealing delay passage of the
contrast, and herniation of the stomach into
the chest through a hernia. A CT scan would
be very useful, particularly in patients with
diaphragmatic abnormalities. Anterior gas-
troproxy with or without diaphragmatic
repair, a frequently used surgical technique,
is a definite treatment that prevents complica-
tion and recurrence.

Conclusion
An attempt to disclose any feasible organ-
ic cause in a child with chronic vomiting and
failure to thrive should be emphasized to
primary care physicians/pediatricians.(8) A
high index of suspicion of this uncommon
condition is important in directing timely
fashioned diagnostic work and treating to
prevent serious complications.

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รายงานคดีอย่างผู้ป่วยที่มีอาการอาเจียนเรื้อรังจากกระเพาะอาหารบิดตัว

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บทคัดย่อ: อาระอาการเจ็บหน่วงขย็นเป็นภาวะที่พบได้เป็นปกติในทารก ซึ่งอาการดังกล่าวจะหายไป เมื่ออายุน้อย 18 เดือน ในผู้ป่วยบางรายที่มีปัญหาอาเจียนเรื้อรัง อาจพบในรายมีภาวะเลือดไม่ไหล รวมถึงภาวะพิการทางท้องท้องปฏิบัติการเพื่อประเมินภาวะพิการต้องการ เช่น ภาวะลำไส้อุดตัน เป็นต้น รายงานฉบับนี้เป็นรายงานคดีอย่างผู้ป่วยที่มีปัญหาอาเจียนเรื้อรัง รวมถึงภาวะลำไส้อุดตัน เป็นต้น ได้รับการรักษาภาวะกระเพาะอาหารบิดตัว รวมถึงภาวะลำไส้อุดตัน จนมีผลดี ปรากฏในปัจจุบัน 2552; 48(1): 31-34.

คำสำคัญ: กระเพาะอาหารบิดตัว ไส้เลื่อนกระบังลม ลำไส้อุดตัน อาการอาเจียนเรื้อรัง