

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Internal Medicine Quiz – Case 13

A 29-year-old male patient was admitted to our Department complaining of epigastric discomfort and recurrent episodes of bilious vomiting over the last 15 days. He had a history of arterial hypertension, diagnosed 2 years ago under treatment with losartan (50 mg/day, per os) but no previous episodes of bowel obstruction or dysmotility. On presentation, his heart rate was 92 beats per minute, his breathing rate was 16/min and his blood pressure was 140/60 mmHg. The abdomen was soft and nontender with reduced bowel sounds. The liver edge was nontender and descended 2 cm below the right costal margin. The spleen was not palpable and there was no evidence of ascites. Physical examination also revealed succussion splash. Chest X-ray and ECG showed no evidence of pulmonary or cardiac disease. Results of blood analyses were: WBC $19.3 \times 10^9/L$ (with 80% neutrophils, 10% lymphocytes and 10% monocytes), Ht 47.3%, Hb 16 g/dL, PLT $591 \times 10^9/L$, erythrocyte sedimentation rate 12, C-reactive protein 50.4 mg/L (normal 0–5) while coagulation studies revealed a normal international normalized ratio (INR: 1.08). The serological enzyme-linked immunosorbent assay (ELISA) was negative for HIV. Serological studies were also negative for HBV and HCV. ABG (FiO₂: 21%) were: pH 7.59, pO₂ 79.2 mmHg, pCO₂ mmHg 37.5, HCO₃⁻ 36.2 mEq/L, O₂Sat 97.3%. His biochemical profile: Urea 123 mg/dL, creatinine 2.3 mg/dL,



Figure 1. Thin barium revealing distended stomach and duodenum.

ARCHIVES OF HELLENIC MEDICINE 2009, 26(2):281–282
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2009, 26(2):281–282

M.P. Siakantaris,¹
N.G. Evangelatos,¹
P. Tzafestas,¹
P. Diamantopoulos,¹
E. Iliadis,¹
M. Tzivras,²
G. Vaiopoulos¹

¹First Department of Internal Medicine

²Department of Pathophysiology,
National and Kapodistrian University
of Athens, School of Medicine, "Laiko"
General Hospital, Athens, Greece

Na⁺ 123 mEq/L, K⁺ 3.1 mEq/L, uric acid 18 mg/dL was consistent with dehydration and electrolyte depletion. The nasogastric tube produced 2 L of bilious content with immediate relief of the patient. Abdominal ultrasound scan showed a fatty liver with no clear evidence of intra- or extra-hepatic duct dilation, gallstones, ascites or pancreatic disease.

Gastric endoscopy did not demonstrate any lesions, upper gastrointestinal series with thin barium revealed distended stomach and duodenum (fig. 1), a finding that was further confirmed by abdominal computed tomography scan (fig. 2), while magnetic resonance angiography excluded the superior mesenteric artery syndrome (SMA). A diagnosis of a possible

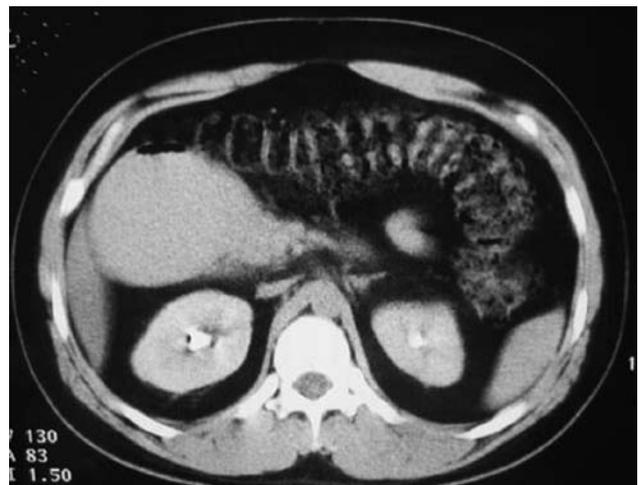


Figure 2. Abdominal computed tomography scan showing distended small intestine.

duodenal diverticulum could not be excluded, thus the patient was submitted to an exploratory laparotomy. During laparotomy, partial malrotation of the root of the mesentery and incomplete fixation of the duodenum by the duodenojejunal junction due to adhesions of its fourth part were found. The adhesions were divided and the involved strictures were untwisted in an anti-clockwise direction until duodenum positioned to the right of the superior mesenteric vessels.

Comment

Rotational abnormalities of the intestine are well documented in infants and children but rare in adults. Most adults with intestinal malrotation are asymptomatic and the anomaly is usually found incidentally in radiological studies or at laparotomy. The incidence of malrotation in adulthood is 0.2%. Malrotation presenting into adult life is associated with a variety of atypical and frequently non-specific gastrointestinal symptoms that may often cause prolonged delay in diagnosis and appropriate treatment. The clinical symptoms depend on the degree of the intestinal (usually duodenal) obstruction and may be complicated with acute pancreatitis or

even intestinal ischemia.

Numerous diagnostic studies have place in the evaluation of a patient with abdominal pain and thus with possible intestinal malrotation. The CT findings in midgut volvulus can be pathognomonic if the classic whirl pattern around a central superior mesenteric artery is seen. The sonographic "whirlpool sign" is an objective and definite sign as volvulus, is shown at color Doppler US as clockwise spiraling of the mesentery and superior mesenteric vein around the SMA. The upper gastrointestinal examination shows a typical corkscrew appearance of the duodenum and proximal jejunum.

The laparoscopic Ladd procedure is safe, feasible and effective for the management of adults with intestinal malrotation with the benefits of a minimally invasive surgery. Moreover laparoscopy also may be helpful when the diagnosis of intestinal malrotation is uncertain.

Corresponding author:

N.G. Evangelatos, First Department of Internal Medicine, National and Kapodistrian University of Athens, School of Medicine, "Laiko" General Hospital, Athens, Greece, Tel.: +30 210 77 71 161, Fax: +30 210 7788830
e-mail: nevagel@med.uoa.gr