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Traumatic Disruption of a Gastrojejunal Anastomosis

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Blunt abdominal trauma is a common occurrence in the era of the automobile, with the spleen and liver being the most frequently injured intra-abdominal organs. Ruptures of hollow organs are not infrequent, but gastric ruptures from blunt trauma are rare, constituting less than 1.7% of reported cases (1-3). Gastrointestinal perforation or devascularization due to blunt trauma is an infrequent but serious injury. There is a general consensus on the need for rapid diagnosis and surgical treatment of blunt perforations (4). Traumatic injury of previously performed gastrojejunostomy is an extremely rare condition (4, 5). This case report describes the traumatic disruption of a gastrojejunal anastomosis in a 36-year-old man who had undergone gastrojejunostomy for treatment of peptic ulcers 12 years previously.

A 36-year-old, otherwise healthy man was admitted to the emergency room following a blow to the abdomen. On examination, he had no fever but he was pale and tachycardic. His abdomen was not swollen and there were no marks on the skin that indicated injury. There was an old, midline incision scar on his abdomen, performed 12 years previously for the treatment of peptic ulcers. Bilateral truncal vagotomy and antecolic gastrojejunostomy had been performed. There was diffuse tenderness, most evident in the periumbilical region, but no discernible peristalsis. His white cell count was 12800/dl and the haemoglobin concentration and measurements of blood chemistry were within reference ranges. A chest radiograph, taken with the patient erect and including both hemidiaphragms, showed both free air and gastric air under the left diaphragm (Fig. 1).

After intravenous cannulation and treatment with broad spectrum antibiotics an exploratory laparotomy was performed, and large amounts of bilious, gastric fluid

were aspirated. There was complete traumatic disruption of the gastrojejunal anastomosis. On macroscopic examination, no marginal ulcer was detected.

The disruption was complete and after debridement of the margins, a Roux-en-Y procedure was performed. The intraabdominal cavity was cleaned with isotonic saline solutions. The abdominal wall was closed with polydioxone. There were no difficulties encountered in the after the operation postoperative period. The patient was discharged on the 10th day.

Although hollow visceral injuries occur frequently in penetrating trauma, the gut is not often injured in blunt trauma (4). A direct blow with any blunt object, including a kick or a punch, a fall from height, or the blast of an explosion, may result in serious injury to the intestine or its mesentery, sometimes with no marking of the skin (6). The small intestine is the third most commonly injured organ (following the liver and spleen) after a blow to the abdomen (7). Gastric rupture from blunt abdominal trauma is uncommon. It has been reported that it constitutes only 0.02 to 1.7% of injuries from blunt abdominal trauma (5). Traumatic disruption of a gastrojejunal anastomosis is much rarer than other gastrointestinal (GI) injuries. The authors found only two cases in the literature, one reported by Semel in 1979 (8) and the other by Metcalfe in 1981 (9).

The mortality associated with blunt GI injuries is usually inversely proportional to their frequency, but varies widely. Rapid diagnosis and treatment reduce morbidity and mortality, which has been described as ranging from 0 to 66% (5). It has been suggested that blunt gastrointestinal injuries occur due to: 1) crushing of the bowel against the spine, 2) the bursting of a "closed

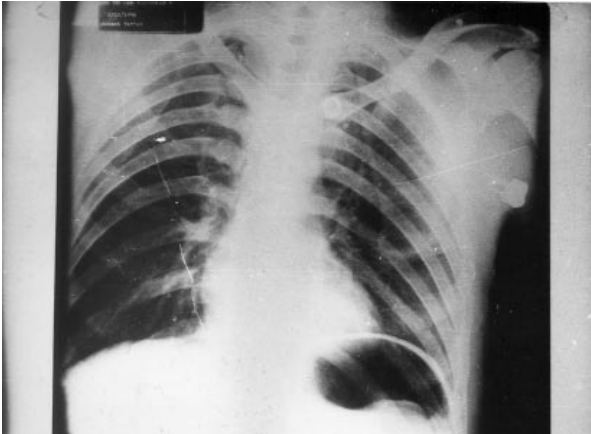


Figure 1. Free and gastric air under the left diaphragm

loop”, or 3) shearing of the bowel or mesentery at a fixed point (4, 5, 7). Courcy et al. (3) reported that the mechanism of gastric injury includes: 1) distension of the stomach with or without obstruction, 2) mucosal trauma,

3) congenital absence or thinning of the gastric muscularite, 4) direct compression against the vertebral column and 5) the presence of gastro adhesions, which predispose this organ to be ruptured.

In gastric injuries, signs and symptoms of an acute abdomen are present in two-thirds of patients. Free intraperitoneal air on abdomen and chest films is not always detected (3, 5). There are no laboratory studies specific to GI injury. Computed tomography (CT) scans and diagnostic peritoneal lavage (DPL), therefore, have become the mainstays of diagnosis for the evaluation of patients with blunt abdominal trauma. In gastrointestinal injury, DPL is clearly superior to CT (4, 10).

Therapeutic principles include meticulous exploration, adequate debridement, the removal of all particulate matter and copious peritoneal irrigation. Postoperative complications often occur; the most common complications are intraabdominal abscesses, gastric fistula and wound infections (3).

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