Jejunojejunal Intussusception with Internal Herniation in the Stomach

Seema Khanna · Dinesh Kumar · Rahul Khanna ·
Sanjeev Kumar Gupta

Received: 16 September 2011 / Accepted: 4 June 2012 / Published online: 4 July 2012
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Abstract Jejunojejunal intussusception with internal herniation of the stomach through a gastrojejunostomy stoma is one of the rarest complications of the previous gastric surgery. The incidence is reported to be less than 0.1 %. An elderly male presented to the emergency room with signs of intestinal obstruction for 1 day. There was also history of appearance of a lump in the mid-abdomen. A primarily healed midline scar of the previous surgery was present; the details of which were not known. X ray abdomen in the erect posture showed multiple air fluid levels. Ultrasonography (USG) revealed dilated stomach with central hyperechogenicity with a peripheral rim of decreased echogenicity. Contrast-enhanced computed tomography (CECT) scan showed jejunojejunal intussusception with internal herniation of the stomach. On laparotomy, it was found that there was a previous gastrojejunostomy with jejunal invagination leading to gangrene of a segment. Resection anastomosis was done. The postoperative period was uneventful.

Keywords Intussusception · Gastrojejunostomy

An elderly male presented to the emergency room with symptoms of intestinal obstruction and appearance of a lump in the mid-abdomen for 1 day. On examination, it was found that the abdomen was soft with a firm, tender intra-abdominal mass of 6×8 cm just left of umbilicus. The lump was mobile in side-to-side direction. On nasogastric

aspiration, 2 l of coffee ground color fluid was aspirated; after which the lump considerably diminished in size. X ray of the abdomen showed multiple air fluid levels. USG revealed a dilated stomach with central hyperechogenicity and a peripheral rim of decreased echogenicity. Thin barium fluoroscopy showed dilated stomach with few bowel loops inside the stomach. CECT examination showed jejunojejunal intussusception with internal herniation of the stomach lumen. The presence of intramural pneumatosis was suggestive of gangrenous segments of bowel (Fig. 1). Emergency exploratory laparotomy revealed a posterior gastrojejunostomy and a mass palpable in the stomach. By gentle traction, the efferent loop of jejunum was delivered out of the stomach (Fig. 2). Approximately, 30 cm of the efferent loop of jejunum was strangulated with gangrenous changes. Resection of gangrenous segment with end-to-end jejunojejunal anastomosis was done. The postoperative period was uneventful and the patient was discharged on postoperative day 10 on full oral diet.

Discussion

Jejunojejunal intussusception with internal herniation of the stomach through a gastrojejunostomy stoma is one of the rarest complications of the previous gastric surgery. The incidence is reported to be less than 0.1 % [1]. Till date only around 200 cases have been reported in literature; the first case being reported in 1914 by Bozzi [2]. This complication can occur any time after Billroth II gastrectomy or gastrojejunostomy. Early diagnosis and prompt surgical intervention are mandatory as loops of bowel may undergo vascular compromise. Mortality ranges from 10 % to 50 % [3].

S. Khanna (✉) · D. Kumar · R. Khanna · S. K. Gupta
Department of General Surgery,
Institute of Medical Sciences,
Banaras Hindu University,
Varanasi 221 005, India
e-mail: seemakhanna119@rediffmail.com

Fig. 1 CT scan showing jejunojejunal intussusception with internal herniation of stomach lumen through gastrojejunostomy stoma

The duration between the previous surgery varies from 5 days to 35 years. Classically, jejunogastric intussusceptions are categorized into four anatomic variants. Type I is an antegrade intussusception of the afferent limb. Type II is an efferent loop invagination and is most commonly observed, accounting for 75 % cases. Type III is a combination of type I and II with intussusception of efferent and afferent limbs. Type IV is intussusception through a side-to-side jejunojejunal anastomosis [4].

Clinical presentations can be:

1. Acute; presenting as an acute intestinal obstruction.
2. Chronic recurrent; may present as recurrent episodes of abdominal pain, relieved by intermittent vomiting.

Fig. 2 Operative photograph showing gangrenous segment of jejunum

3. Acute postoperative; starting by the fourth or fifth postoperative day and with a tendency to reduce spontaneously [5]. Various factors have been incriminated such as hyperacidity, adhesions around the suture lines, shortening of jejunal mesentery long afferent loop, jejunal spasm with abnormal motility, increased intra-abdominal pressure, retrograde peristalsis, etc. [6]. Diagnosis of intussusception in adults, even with history of the previous surgery, is difficult. The classic triad of pain, palpable mass and red currant jelly stool rarely occurs in adults.

Plain skiagram confirms the presence of mechanical bowel obstruction. USG abdomen may reveal intestinal loops inside the stomach. Though upper GI endoscopy is a diagnostic tool but not usually performed in acute intestinal obstruction, as there is a small but definite risk of causing bowel perforation. CECT abdomen is the investigation of choice to confirm the diagnosis.

A high degree of clinical suspicion is necessary for early diagnosis of this potentially lethal complication. Past history of surgery is pertinent. Radiologists' awareness of this entity is helpful in guiding the clinician towards an early diagnosis. Immediate surgical intervention to avoid development of gangrene prevents morbidity and mortality. Reduction by gentle traction, with or without opening the stomach, should always be attempted. If there is gangrenous bowel, then resection is mandatory. Additional procedures to prevent recurrence of intussusception, such as fixing the jejunal loops together or to the colon or mesocolon with or without enterostomy, are not warranted because of low chance of recurrence. The high mortality associated with this condition is usually due to delay in diagnosis, leading to gangrene of jejunal loops and septicemic shock.

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