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Intussusception into the Enteroanastomosis after Billroth II Gastric Resection; Diagnosed by Gastroscopy

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A case of retrograde intussusception (acute type) of efferent limb into Braun side-to-side jejuno-jejunal anastomosis is presented. Intussusception, though infequent, is well recognized complication after gastric surgery. Patient was 50 year old man who was admitted with epigastic pain and abdominal mass for 6 hours. Patient had a history of total gastrectomy 2 years before admission due to stage II gastric cancer. Seven houn after admission, hematemesis developed. Emergency fiberopticgastroscopy revaled type 4 jejunogastric intussusception. Segmental resection with end-to-end reanastomosis was performed.

Key Words: *Intussusception, Hematemesis, Fiberoptic-gastroscopy*

INTRODUCTION

INTUSSUSECEPTION is an extremly rare complication following gastroenterostomy and a Billroth type II gastric surgery, with or without Braun anastomosis. It can occur after either partial or total gastric resection.

Intussusception has two clinical patterns-an acute type and a chronic course with episodes of recurrence (Irons and Lipin, 1955; Grevsten et al., 1979).

In the acute form, hematemesis can be seen. Mortality rates are quite high, espicially if corrective operation is delayed for more than 48 hours (Rishel et al., 1980).

Preoperative diagnosis by barium meal examination and gastroscopy is possible. But preoperative gastroscopic confirmation has been reported infrequently (Woodard et al., 1973; Brynitz and Rubinstein, 1986).

In the present case, following to total gastrectomy with esophagojejunostomy (with Braun anastomosis), a retrograde intussusception of the efferent limb into the jejunojejunostomy (Braun anastomosis site) occured. The intussusception was well visualized by gastroscopy prior to upper G-I barium study.

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CASE HISTORY

A 50-year-old man was admitted with abdominal cramping pain and vomiting. Twenty one months previously he had been operated due to gastric cancer (T3 No Mo; stage II). At that time UGI barium study and gastroscopy revealed two separated ulceroinfiltrative lesions on the lesser curvature site of the upper body and anterior wall near the greater curvature site of the antrum respectively. So total gastrectomy, end-to-side retrocolic loop esophagojejunostomy and Braun anastomsis was performed. Thereafter he was managed with anticancer chemotherapeutic agent (5 FU) for 1 year. Six hours before admission, he had epigastric pain, nausea and vomiting. Physical examination revealed 7 Cm in diameter, well-defined, smooth surfaced, tender, movable, firm mass in periumbilical area. Seven hours after admission, black hematemesis developed. Fiberoptic-gsatroscopy revealed black serosanginous fluid in jejunum and edematous red-black intestinal loop filling within the Braun anastomosis site (Fig. 1).

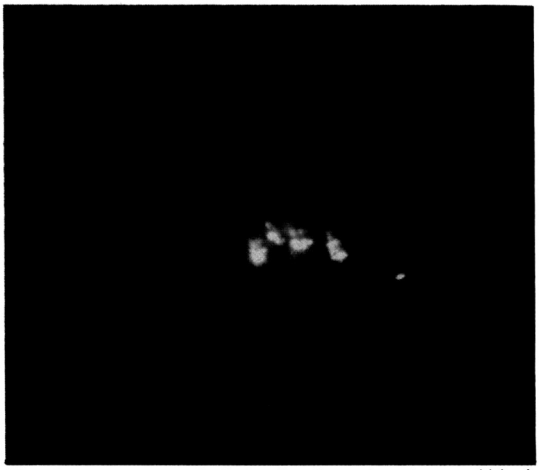

Fig. 1. Gastroscopic findings showing edematous red-black intestinal loop filling within jejunum

Fig. 2. UGI barium study showing serpingenous crowding of jejunal loop within jejunum

Under the impression of intussuseption with strangulation UGI barium study was performed. It revealed serpingenous crowding of small bowel loop with mucosal thickening within the Braun anastomosis site (Fig. 2). An exploratory laparotomy was performed 17 hours after the onset of symptoms, and it was seen that efferent limb of jejunum had invaginated into the Braun anastomosis site of jejunum (Fig. 3). There was no evidence of cancer recurrence. Intussusception was reduced by manual pulling. When disinvaginated, the bowel was edematous, red-blue in colour, and decreased vascular supply 60 cm in length (Fig. 4). So segmental resection with end-to-end reanastomosis was performed. Surgical specimen showed segmental superficial (mucosal) infarction, marked submucosal edema and congestion. The post-operative course was uneventful, and after being discharged the patient was followed up at the out patient department for a year. He remained quite well.

DISCUSSION

Jejunogastric intussusception was first described by Bozzi in 1914, thirty years after the first gastrojejunostomy was performed (Monroe and Murry, 1979; Brynitz and Rubinstein, 1986). Slightly more than 170 cases are presented in the world literature (Conklin and Markowitz, 1965; Rishel et al., 1973; WolukauWanambwa, 1977; Olsen and Bo, 1978; Monroe and Murry, 1979). Intussusception of the jejunum into the stomach through the stroma of the gastroenterostomy is a rare but well recognized complication following gastric surgery. Intussusception into the enteroanasomosis would seem to be even more rare. Conklin & Markowitz review of 114 cases of intussusception shows that only 7 cases are retrograde intussusception through an enteroanastomsis after gastrectomy (Conklin and Markowitz, 1965). Thereafter only one case was reported (Grevsten et al., 1979). As seen, the present case represents retrograde invagination of the efferent limb into the enteroanastomosis. Anatomically, jejunogastic intussusception may be classified into 5 types (Brynitz and Rubinstein, 1986).

Type 1—with afferent limb intussusception (5.5%)
Type 2a—with efferent limb intussusception (70%)
Type 2b—with efferent-efferent limb intussusception (6.5%)
Type 3—a combination of type 1 and 2 (10%)
Type 4—with an intussusceeption through a Braun side-to-side jejuno-jejunal anastomosis (8%)

Another means of classification noted in the literature is by clinical course, distinguishng between the acute type and recurrent or chronic types (Irons and Lipin, 1955; Grevsten et al., 1979). The acute type

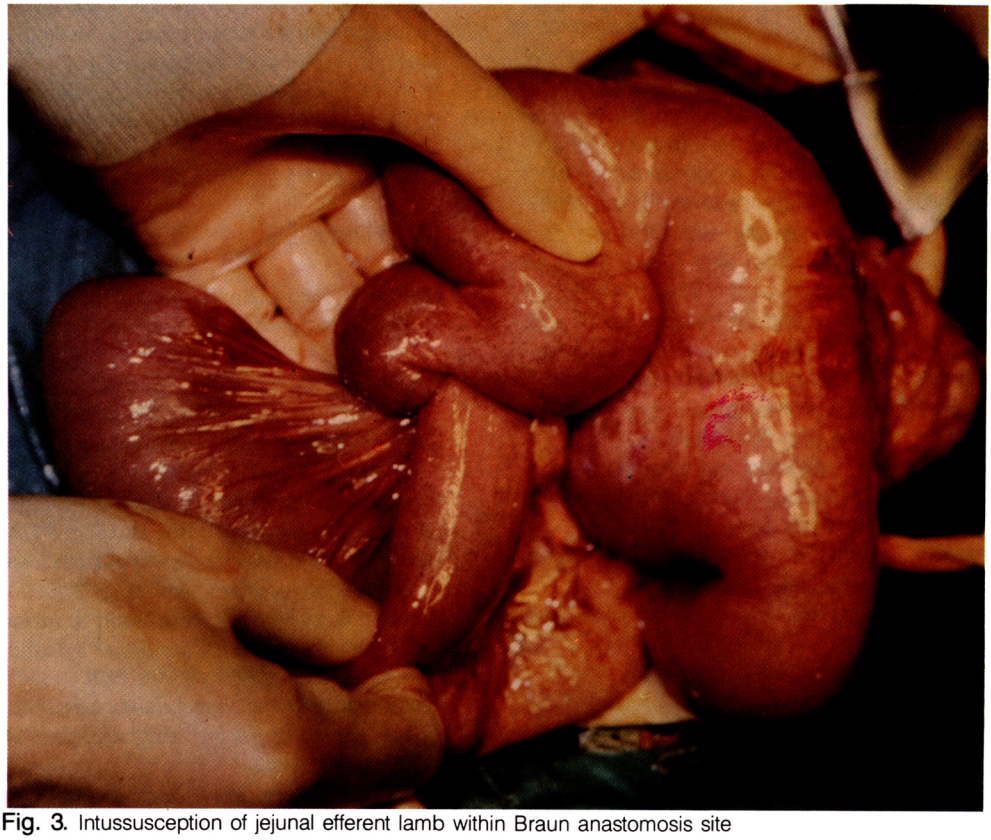

Fig. 3. Intussusception of jejunal efferent lamb within Braun anastomosis site

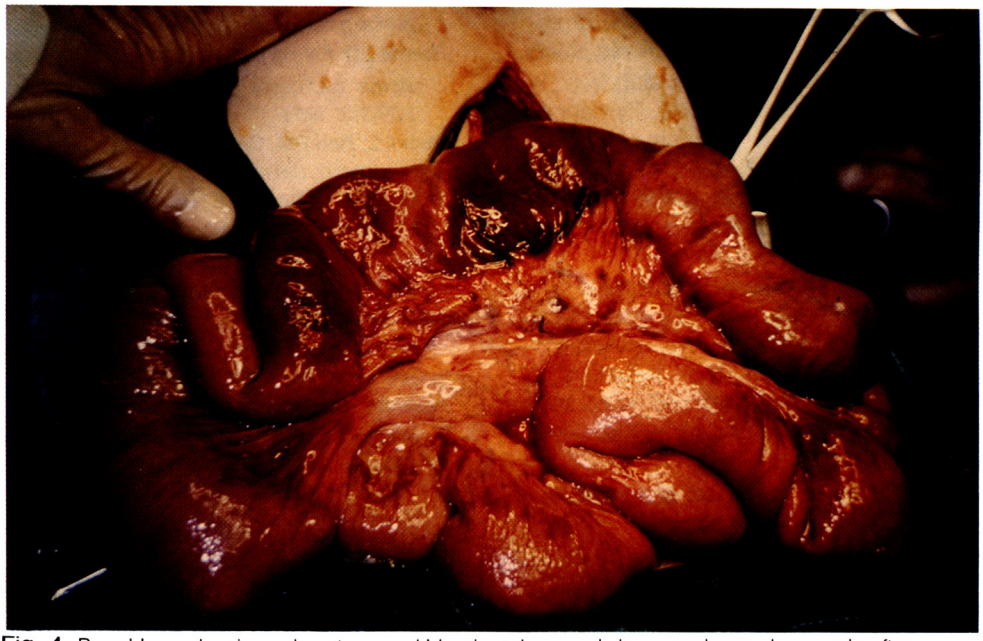

Fig. 4. Bowel loop showing edematous, red-blue in colour, and decreased vascular supply after manual reduction

presents the classic triad; (1) sudden onset of epigastric pain, (2) vomiting of food, then of bile, and later of blood, (3) palpable movable epigastric mass (Rishel et al., 1980). Hematemesis implies a complete obstrution, and the bleeding originates from the necrotic jejunal mucosa. The blood usually is dark red and rarely, bright red. A palpable, tender mass is noted in approxmate one half of the patients (Foster, 1966). The acute type occurs usually within the first day postoperatively, but can occur after a year (Monroe and Murry, 1977). In our case the time that elapsed between the gastrectomy and the intussusception was 21 months. Chronic type usually has later onset. Chronic type present recurrent episodes of upper abdominal discomfort, sometimes accelerated by meals (Palmer, 1954; Brynitz and Rubinstein, 1986).

The pathogenesis is unknown, but several possible causes had been discussed (Irons and Lipin, 1955; Olsen and Bo, 1978; Waits et al., 1980).

(1) Functional causes like antiperistalsis triggered possible by hyperacidity or spasm
(2) Mechanical causes like increased intra-abdominal pressure
(3) Adhesions developing after laparotomy
(4) Derangements in stomal function produced by vomiting

Early diagnosis is of paramount importance. The gastroscopic findings of intussusceptiion have been described infrequently (Woodard et al., 1973; Brynitz and Rubinstein, 1986). Large reddish-blue intestinal loop filling within the lumen of the stomach or enteroanastomotic loop with or without dark-red blood can be seen. The next study that is diagnostic is upper G-I barium or gastrograffin study. Typical 'coil spring' appearance within the gastric pouch or enteroanastomotic loop can be demonstrated (Palmer, 1954; Irons and Lipin, 1955; Salem and Coffman, 1959; Devor and Passaro, 1966; Edwards and Aubrey, 1977).

Eventhough jejunogastric intussusception is a rare complication after gastric surgery, early diagnosis is important, because immediate treatment is warranted in the acute type. Most authors report a mortality of 10% if operation is performed within 48 hours after the onset of severe symptoms, and as high as 50%, if operation is delayed. In our case operation was performed 17 hours after the onset of symptoms. Treatment of the acute type is always surgical, with reduction of the intussusceptum, if viable and reducible, or resection of the bowel, if it is necrotic. Some authors have described disinvagination either by the gastroscopy or by the weight of the contrast material at the time of upper G-1 series, in chronic types (Monroe and Murry, 1979).

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