

Clinical case of intussusception of the jejunum into gastroenteroanastomosis after gastric resection

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Abstract

Intussusception is one of the varieties of mixed (strangulation and obturation) mechanical intestinal obstruction. It arises as a result of the introduction of the adducting segment of the intestine into the abducting one. Gastroduodenal intussusception is an extremely rare type of high intestinal obstruction. It most often occurs after surgery on the stomach and much less often in non-operated patients. Intussusception of the jejunum into the stomach can occur soon after surgery, but most often, this complication occurs 5–15 years after the intervention. This paper describes a case of retrograde intussusception that arose 9 years after the Billroth II gastric resection with Braun anastomosis. This clinical case acquaints specialists with the possibility to encounter this pathology in clinical practice and demonstrates the appropriateness of differential diagnostics in cases with similar clinical symptoms.

Keywords: gastric cancer, intussusception, gastroenteroanastomosis, gastric resection, cancer recurrence.

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Intussusception (introduction) is one of the forms of mechanically mixed intestinal obstruction (3%–4%), occurring as a result of the intestinal afferent segment introduction into the efferent one. Intussusception can be caused by inflammatory changes in the intestine, intestinal tumors, and helminthic invasion [1,2].

Intussusception in the stomach and duodenum is an extremely rare type of high intestinal obstruction. It occurs most often after gastric surgery and much less frequently in patients who did not undergo operation [3,4]. The afferent loop is intussuscepted into the anastomosis in 75% of cases, efferent loop in 11%, and both loops are intussuscepted simultaneously in 10% of cases. Intussusception of the jejunum into the stomach can occur shortly after surgery, and most often this complication is registered in 5–15 years after the intervention [5].

Predisposing and producing factors of intussusception are present. The first ones include broad anastomosis, improper fixation of gastroenteroanastomosis in the window of the transverse colon, and intestinal connection of the stomach in the antiperistaltic direction. Productive aspects are con-

sidered to be stomach atony and an abrupt increase in intra-abdominal pressure [6,7].

This study aimed to introduce the possibility of intussusception of the small intestine into gastroenteroanastomosis in the late postoperative period after gastric resection to specialists.

Clinical case. Patient A. was transferred urgently from the central district hospital on 11/02/2019 to the Republican Clinical Oncological Dispensary of the Republic of Tatarstan with a diagnosis of cancer recurrence in the stomach stump complicated by gastric bleeding.

Examination in the admission ward. The patient complained of severe asthenia and epigastric pain, with severe general condition. The skin and visible mucous membranes were pale. The pulse was regular and of poor volume at 98 beats per minute. Blood pressure was 170/90 mm Hg. Heart tones were muffled. The tongue was clean and dry. In the mesogastric and left lateral region of the abdomen, a dense inactive, and moderately painful tumor-like formation up to 15–20 cm in size was palpated. Melena was revealed on the digital rectal examination. Gastric contents of 300 ml with a hemorrhagic nature were found via a nasogastric tube.



Fig. 1. Radiography of the abdominal cavity with passage of barium suspension

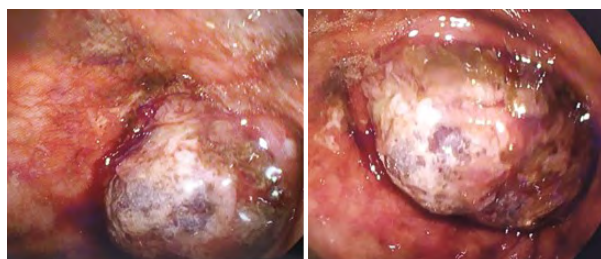


Fig. 2. Endoscopic presentation of the stomach

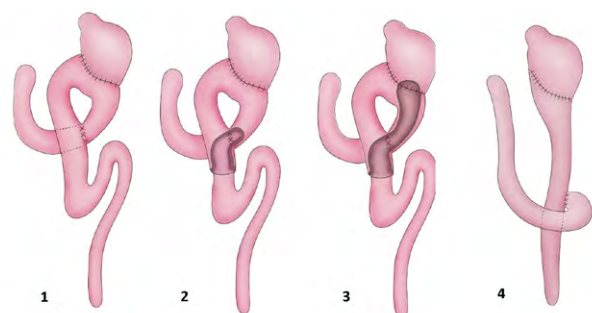


Fig. 3. View after the surgery 1 (1); route of intussusception (2, 3); postoperative view (4).

Upon admission, the *laboratory and instrumental studies* included complete blood count (erythrocytes = $3.29 \times 10^{12}/l$, hematocrit = 31.4%, hemoglobin = 107 g/l, leukocytes = $11.0 \times 10^9/l$, and platelets = $161 \times 10^9/l$).

Fibrogastroduodenoscopy (FGDS), performed at the central district hospital on 11/02/2019, revealed a giant blood clot in the stomach, suspecting gastric cancer recurrence.

Considering the ongoing gastric bleeding, the patient was admitted to the intensive care unit for additional examination.

The results of *laboratory and instrumental studies* showed general blood test (erythrocytes = $3.1 \times 10^{12}/l$, hematocrit = 30.1%, hemoglobin = 102 g/l, leukocytes = $11.5 \times 10^9/l$, and platelets = $150 \times 10^9/l$).

FGDS dated 11/02/2020 showed the stomach state after Billroth II resection, a small stump occupied completely by a blood clot, which could not

be evacuated as it was fixed. The clot spread into the intestinal complex through anastomosis. Thus, no clear evidence for recurrence has been identified. Ongoing hemorrhage was not observed.

The follow-up was recommended based on the data from the endoscopic examination. During the conservative therapy, no bleeding episodes were observed, and the pain syndrome in the epigastric region was stopped. The patient subjectively noted an improvement in well-being.

The main symptom of bleeding from stomach cancer recurrence is often repeated coffee-ground vomiting, which did not correspond to the patient's clinical presentation, as bleeding was scarce, without hemodynamic disorders. Differential diagnostics with retrograde intussusception into the anastomosis was performed, but imaging data was lacking. Passage of barium through the intestines was decided, and FGDS was performed in dynamics.

Radiography of the abdominal cavity with barium passage. Free gas in the abdominal cavity was not detected. On the right, heterogeneous contents in the intestine were found. The small intestine was swollen with gas, without obvious levels and arches (Fig.1).

The board of endoscopists concluded the stomach state after Billroth II resection, the stump was of medium size, containing bile, and the mucous membrane was edematous and hyperemic. Gastroenteroanastomosis was performed with a large ovoid intussusceptum infiltrate located in the afferent and efferent loops of the small intestine, and the mucous membrane of the intussusceptum was gray (Fig.2).

The surgery was performed on the patient based on the endoscopic presentation. Intraoperatively, intussusception of the efferent loop of the jejunum into the jejunum through a Brownian anastomosis into the gastroenteroanastomosis region and the stomach was revealed. Considering the duration of intussusception, it was decided to perform resection of the jejunum with intussusceptum and re-formation of the gastroenteroanastomosis. The

afferent and efferent loops of the small intestine were resected together with intussusceptum and dissected away from the stomach. End-to-side gastroenteroanastomosis and Roux-type end-to-side jejuno-jejunoanastomosis were formed (Fig. 3).

The prepared sample was sent for *histopathological examination*. Macroscopic description of the preparation indicated a segment of intestine as 40 cm in length with intussusception, extensive necrosis, and hemorrhage in the intestinal wall. Microscopic description of the sample indicated extensive necrosis and hemorrhage in the intestinal wall and polymorphic cell infiltration.

Conclusion. Retrograde small bowel intussusception in adults is extremely rare, but often requires urgent surgical intervention. Nonspecific symptoms, diagnostics requiring imaging methods, extremely rare frequency, and minimal number of cases make this complication difficult to diagnose. The material presented can contribute to the emergence of diagnostic and therapeutic approach in case this pathology is suspected.

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