

## Intra-gastric intussusception — a curiosity

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### Abstract

A case of a 53-year-old man with an intra-gastric intussuscepted small bowel segment is presented. The patient had previously been operated on for recurrent bleeding gastric ulcers.

A discussion is presented on the unusual aspects of the intussusception. (*Acta gastroenterol. belg.*, 1999, 62, 252-254).

**Key words** : intussusception, intra-gastric, previous surgery.

### Introduction

Intussusception is a common pediatric problem, where it is mainly idiopathic. In adults intussusception is nearly always secondary. A proximal bowel segment is pulled into the distal bowel leading to ischemia and necrosis. The triggering factor can be a tumor, an inflammatory process or previous surgery.

We describe a patient with an intra-gastric intussusception as a late complication of previous surgery.

### Case report

A 53-year old white male was seen in the emergency room with acute abdominal pain, nausea and blood-stained vomiting. He had been admitted 6 months previously for a detoxication treatment of ethylalcohol abuse. He had a medical history of repetitive gastric ulcers. For this he was operated on three times — in Germany, in Switzerland and in Belgium. The patient denied recent abuse of alcohol. He also denied NSAID use.

The abdominal pain had appeared suddenly during sleep, awakening the patient. It had remained continuously present, varying in intensity, for eight hours.

On admission vital signs were normal (blood pressure, pulse, temperature). Heart and lungs appeared normal at physical examination. The epigastric region was sensitive to palpation. The abdominal wall was supple with no rigidity. No masses were palpated. Peristalsis was present. The rectum did contain stool. The hematocrit was negative.

Radiologic examination of heart and lungs revealed a normal cardiac and mediastinal image. There were no lung infiltrates. Standard abdominal X-ray revealed aerogastry. No free air was demonstrated. In the left upper quadrant a few discrete level images were noted.

The patient was put on IV fluids and stomach acid inhibitory medication (ranitidine IV). An echographic examination and gastroscopy were proposed.

Blood analysis gave hyperleukocytosis : 16.900 WBC/mm<sup>3</sup>, with 92% neutrophils. Hemoglobine : 15 g/dl. Platelets were normal. Biochemical results were all within normal range : transaminases, bilirubin, amylase and lipase, alkaline phosphatases and gamma GT were all normal.

Echography revealed the presence of an ill-defined mass in the left upper quadrant of the abdomen, extending into the mesogastrium and consisting of several small bowel segments. A thickening of the wall of these bowel segments was apparent, together with the presence of some extraluminal fluid. A suggestion was made of an inflammatory process or an invagination. A CT scan was proposed.

Gastroscopy revealed a large grey-blue and purple coloured mass that nearly filled the gastric pouch and which was consistent with an intussuscepted dilated small bowel loop.

At surgery a necrotic intussuscepted small bowel segment was found in the stomach. The patient had previously been submitted to a subtotal gastrectomy type Billroth II, with an associated jejunum-jejunostomy (omega-loop) to prevent bile drainage to the stomach. Through this the distal small bowel had invaginated. The invaginated segment needed to be resected. The continuity of the bowel was re-established with an end-to-side anastomosis with maintenance of the omega-loop jejunostomy.

Post-operatively antibiotics were given for four days (cephalosporins and ornidazole). The patient recovered uneventfully.

### Discussion

Intussusception can occur from the duodenum to the rectum.

In most cases a small bowel segment invaginates into a distal segment or into the colon (1). Intra-gastric intussusception is very rare and is always secondary to previous surgery with a modified anatomy.

In babies and toddlers intussusception is frequent until the age of 2 (2). It can be intermittent and relapsing. It is nearly always idiopathic and may be caused by viral inflammation.

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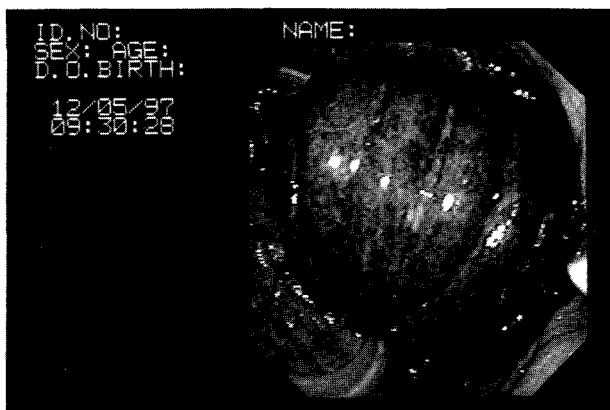


Fig. 1. — Gastrosopic image of the intussuscepted segment of the bowel.



Fig. 2. — Surgical view after opening of the stomach.

In adults intussusception is mainly secondary: the triggering factor can be a tumor, inflammation or previous surgery (1,3). Whereas the symptoms are intermittent in children, in adults they are progressive (4).

The clinical picture of intussusception is rarely typical. Diagnosis can be elusive and requires special vigilance of the emergency physician (5,6,7). Gradually a clinic of intestinal obstruction develops with abdominal pain, distension, nausea and vomiting. In adults the evolution is progressive, leading to a classic picture of complete mechanical obstruction. Early surgery is indicated but frequently discovers an already gangrenous intussusceptum requiring resection (4).

Abdominal echography and computer tomography have become important tools to establish the diagnosis (8,9). A plain abdominal radiologic view rarely gives indicative information. Oral and rectal gastrograffine are diagnostic but barium is contra-indicated because of risk of perforation. Endoscopy can be very helpful, as was gastroscopy in our patient. Colonoscopy can be diagnostic in ilio-colic and colo-colic intussusception (1,10).



Fig. 3. — Image at echography — a layered “cocarde” image is apparent.

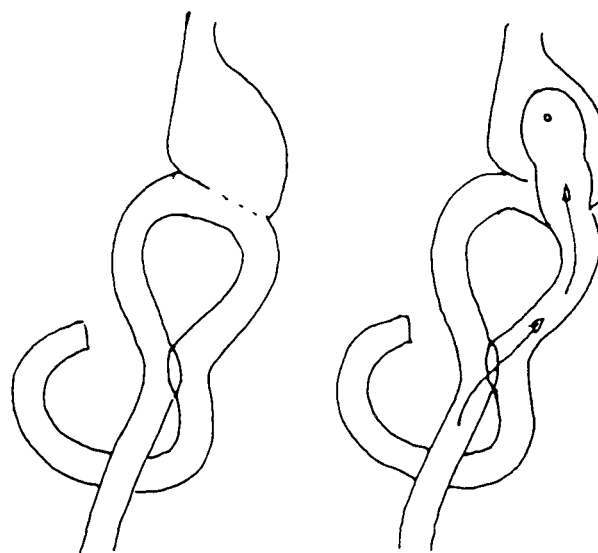


Fig. 4. — Omegaloop anatomy and route of invagination.

At echography typical images appear of the invaginated and strangulated segment (9,11,12). A “target-like” abdominal mass with central dense echoes and peripheral sonolucency or a mass with a layered “sandwich-like” configuration becomes apparent. “Doughnut” and “cocarde” are other terms that are commonly used. A layered configuration should raise suspicion for an invagination.

Three patterns can be observed on CT examination: a target lesion, a reniform mass or a sausage shaped mass (8,12,13). A layered structure is the rule. The most common CT image is that of an intraluminal soft-tissue mass with an excentrically placed fatty area of attenuation representing the intussusception with the intussuscepted mesentery.

This intra-gastric intussusception presents several peculiar aspects. Normally the invagination follows the natural direction of peristalsis and the proximal part

is protruding in the distal segment. In our patient the invagination took place partly anti-peristaltic, partly iso-peristaltic wise. The distal part was engaged in an anti-peristaltic direction. In the proximal part the invaginated distal segment proceeded iso-peristaltic wise.

The surgical technique of a subtotal gastrectomy type Billroth 2 with an associated jejuno-jejunostomy ("omega-loop technique") is known for its possible complications: the afferent loop syndrome, the efferent loop obstruction, strangulation, invagination, circulus viciosus and ulcer at the suture line have all been described (14,15). Intra-gastric small bowel intussusception can be added to this list.

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