

INTESTINAL INVAGINATION OF ADULTS

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Authors present literature review on incidence, etiology, pathogenesis, presentation and management of intestinal intussusception in adults, rare form of acute intestinal obstruction. The study involved assessment of a case history of a patient with intestinal intussusception.

Key words: *intestinal obstruction, intestinal intussusception, acute peritonitis, emergency surgery.*

Introduction. Acute intestinal blockage (AIB) is more difficult for diagnosis in acute surgical diseases of the abdominal organs and it is characterized by severe clinical course, the highest mortality in patients operated on due to acute peritonitis.

Objective. An important feature noted recently is the redistribution of the frequency of individual forms of intestinal obstruction. Thus, such forms as nodulation and intussusception became much less common.

2. Purposes, subjects and methods:

2.1. Purpose – is to study individual forms of intestinal obstruction.

2.2. Subjects & Methods. Intussusception in adults is one of the rare and poorly diagnosed forms of acute intestinal blockage (AIB). Its incidence ranges from 10 to 18 % among all forms of AIB. Intussusception of the cecum occurs in 45–63 %, of the colon in 15 %, of the ileocolon in 12–17 %, of the small intestine in 10.7 % cases. Multiple intussusception develops in 0.4–3.6 % cases (*Fig. 1*), complex (multi-cylindrical) in 8.3 % [1–5].

Rare forms of intussusception:

- Intussusception of cupola, lateral walls of the cecum;
- Intussusception of appendix, diverticula of intestine;
- Intussusception of appendiceal stump;

- Intussusception of haustrum of colon;
- Multiple intussusception of different parts of intestine;
- Intussusception of tumors and hematomas;
- Retrograde intussusception;
- Multi-cylindrical intussusception.

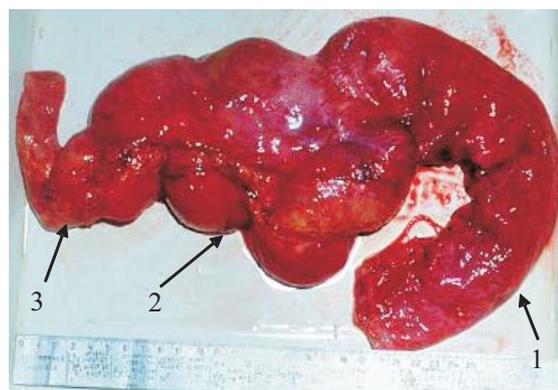


Fig. 1. Macro-preparation. Plural invagination of the small intestine (actually observe).

1 – leading loop; 2 – invagination – 10 sm;
3 – taking loop of the small intestine

Any fixed mechanical obstacles or local morphological changes of the intestinal wall can be involved to the intestinal lumen, then advance into the intestine by peristaltic wave. Most frequently intussusception in adults trigger development of tumors, particularly peduncular polyps in 25–33 % cases.

Intussusception can develop secondary to infectious diseases, causing lesions and inflammatory infiltrations in the intestine, (dysentery, typhoid fever). They cause discoordination of peristalsis, a reinforcement of segmental peristalsis in an attempt of the intestine to get rid of the foreign

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mass. This is the pathogenic mechanism, triggering the process of intussusception. A similar mechanism for the development of intussusception occurs in hemorrhages in its wall (intramural hematomas of various origin: spontaneous, posttraumatic, Shonlein–Henoch's disease, etc.).

High intussusception, as other forms of acute intestinal obstruction of this localization, is characterized by metabolic disturbances. Presentation of the disease is determined by the age of the patient, the speed with which the intestine is intussuscepted, the type of intussusception, the length of intussusception, the nature of the intestinal contents at the time of intussusception, and changes in the intussuscepted intestine.

Conflict of interests. There is no conflict of interests.

3. Results and discussion. In rapid introduction and necrosis of intussusceptum, spasms may be absent. Only acute, then subsiding pain with the subsequent development of the second stage (phase) of intoxication and peritonitis. The classic symptoms of intussusception are known to be the following triad:

1) Acute, then recurring pains in the form of contractions. They are immediately localized, usually in the place where the intussusception occurred, but then, as the intussusception advances, they move along the intestine and radiate to the epigastrium, as typically mesenteric;

2) The presence of a tight-elastic, mobile, painful formation palpable through the abdominal wall or rectum (Rush's symptom). With palpation pain may increase. Intussusceptum is palpable in intussusception of the small intestine in 60 %, of the colon in 40 %;

3) Anal bleeding (Cruveiller's symptom) in bowel movements, or presence of blood in the wash water after an enema. It is observed in 70–80 % of patients. Vomiting of blood, coffee-ground vomiting in high (gastrointestinal) intussusception is a late syndrome;

One of the clinical masks of intussusception is ischemia, which is clinically very close to acute impairment of blood circulation in one of the visceral vascular pools (upper, lower mesenteric, celiac). Both diseases are characterized by acute, sudden pain, initially intensified, then subsiding peristalsis, flatulence, presence of palpable intestinal compaction (heart attack in case of acute intestinal obstruction, Mondor's syndrome), discharge of blood during a bowel movement or tenesmus. Hemodynamics and metabolism are disturbed with the development of thrombosis, intoxication increases. However, in acute

intestinal obstruction pain is constant, increasing, not cramping. Painful induration appears much later. Blood discharge is a late and inconsistent symptom. Swelling of the intestine as one of the symptoms of acute intestinal obstruction appears earlier and involves significant areas of the intestine (symmetrical swelling). At the same time, vomiting, as one of the main symptoms of acute intestinal obstruction, is not typical. Dysentery is a general symptom in both diseases, seasonally increasing, up to attacks of pains, being false defecation, diarrhea with mucus and blood. The dysenteric bleeding, as a rule, is moderate, traces of blood in the mucous intestinal contents. In tenesmus, it is called "blood spitting". Pain is felt on palpation of the large intestine, mainly of its left half. Infiltrates are not detected. Dysentery is an infectious disease, so intestinal symptoms are accompanied by symptoms of a general inflammatory reaction, hyperthermia, changes in the blood formula, early intoxication. Intestinal paresis develops with especially aggressive forms of the disease. Conservative treatment of intussusception, medication, physical attempts to reduce intussusception through the abdominal wall in adults, especially in elderly, are not allowed.

The loss of time for attempts at conservative treatment is directly proportional to the amount of time lost to an emergency operation for life reasons. Moreover, retrograde, jejuno-gastric (postoperative), complex intussusception, intussusception of the appendix and Meckel's diverticulum do not respond to conservative treatment.

Reduction of intussusception is allowed only in the early stages, with recent, small and non-fixed intussusceptum.

Reduction of intussusception should be carried out in combination, by squeezing the intestine entering the intussusceptum and pushing the intussusceptum head out, having previously performed a novocainic blockade of the mesentery of both intestines – the invasive and ingested intussusceptum. If resistance is felt, the reduction should be stopped.

If the reduction is successful, it is not necessary to transfer the contents accumulated over the intussusceptum to the loop withdrawn from the intussusceptum by "squeezing", since the "massage" of the intestine by squeezing can lead to thrombosis in both mesenteric vessels and microvascular bed. In addition, reduction results in long-term paresis of the intestine.

If the reduction is not indicated or impossible, resection of the invasive intestine and the "casing"

intestine is carried out according to the technical standards adopted for mechanical intestinal obstruction.

We present the following case to illustrate the difficulties in diagnosis and errors in the treatment of intussusception in adults.

A 34-year-old patient C/H 15561/1005 on 07.08.2015 was urgently admitted to the Department of Emergency Surgery of Andijan State Medical Institute with acute intestinal obstruction.

Complaints: abdominal pain, flatulence, stool retention, vomiting, general malaise.

Present history: disease started 4 days ago.

On examination: state of moderate severity. Consciousness is clear. Skin is palepink. Breath is vesicular, 26 breaths per minute. Heart tones are dull, tachycardia. BP is 120/80 mmHg, pulse is 96 beats per minute. Tongue is dry, covered with dirty-grey plaque. Stomach is bulging, tender on palpation. Deep palpation showed pain in the right iliac region, and clearly detected a densely elastic, slow-moving infiltrate.

Common blood analysis: Hb – 118 g/l; RBC – 4.02; CP – 0.8; WBC – 4.5; stab cells – 7; segmented – 68; eos – 1; lymph – 27; blood sedimentation rate – 38. *Urine analysis:* protein-abs, ep – 0-1-3, L – 5-5-6.

ECG- Right sinusoid rhythm.

X-ray showed cups of Kloyber.

Ultrasound detected considerable formation in the right abdominal side with the size of 12*8 cm (may be intussusception). Loop of ileum is widened, full with liquid contents.

On 07.08.2015 the patient underwent operation No.301, middle-median laparotomy under endotracheal anesthesia.

An increase and a thickening of the walls of the small intestine were established, with a further revision, intussusception of a part of the small intestine into the small intestine was revealed. Reduction of intussusception of the small intestine was unsuccessful.

The patient underwent resection of the small intestine with intussusception followed by anastomosis side to side.

Sanation of the abdominal cavity. Drainage tube was administered into the area of the anastomosis. The surgical wound was sutured in layers.

In the postoperative period, the patient was given antibacterial therapy, infusion

therapy. On day 10 after surgery, the patient was discharged without complications.

The diagnosis after surgery is intestinal intussusception (Fig. 2).



Fig. 2. Invagination the small intestine into the jejunum

A bunch of polyps was determined when dissecting intussusceptum on the mucous membrane of the small intestine. Given the presence of small intestinal polyposis, the patient was diagnosed with Pate-Eggers syndrome, multiple small intestinal polyposis.

Conclusion. The main cause of intestinal intussusception in adults are tumors. The younger the patient, the more severe intussusception is. The older the patient, the more likely the presence of the tumor, as the causes of intussusception. The older the patient, the faster the circulatory disorders in the intussuscepted intestine develop, the wider the zone of their spread, the higher the risk of circulatory necrosis after surgery. The larger the size of the intussuscepted intestine, the more the mesentery is involved in it, the more the blood circulation in the intussuscepted intestine is impaired, the faster the necrosis occurs. The higher the intussuscepted intestine is located, the more prevalent is presentation of high obstruction, the more complicated the course. The faster intussusception develops, the faster and deeper circulatory disorders occur in the intussuscepted intestine. During the operation for intussuscepted intestine, it is necessary to revise the entire intestine, intussusceptions may be multiple and unrecognized.

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