



INTUSSUSCEPTIONAL OBSTRUCTION IN CHILDREN

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Article history:	Abstract:
Received: December 8 th 2022 Accepted: January 8 th 2023 Published: February 4 th 2023	This article unifies and summarizes the basic principles of diagnosis of clinical symptoms of diseases causing the vomiting syndrome in children with acquired mechanical intestinal obstruction. A general overview of acquired mechanical intestinal obstruction is given here. This article describes features of clinical course, diagnosis and differential diagnosis of intussusception and adhesion obstruction in children. The medical and diagnostic policy is proven. The authors conclude. that early diagnosis of diseases causing acquired intestinal obstruction in children reduces complications and mortality
Keywords: intussusception, intestinal obstruction, disinvagination, intestinal resection	

INTRODUCTION. Intussusception is a type of intestinal obstruction in which one part of the intestine intrudes into the lumen below or above the section of the intestine causing the obstruction. According to different authors, intussusception accounts for 4.9 to 13.4% of different types of intestinal obstruction [1]. Especially often (up to 80%) it is the cause of acute intestinal obstruction in children of the 1st year of life. Difficulties in diagnosing intussusception in adults are primarily due to the fact that most surgeons are convinced that intussusception is a "childhood disease". Besides, in adults it often lacks those classical features that are characteristic of children. Due to the mentioned reasons, 1/3 of patients with intussusception arrive to surgical departments late and surgical intervention is not performed in time. According to generalized literature data, the proportion of intussusception varies from 0.6 to 17%. Cecointestinal intussusception is observed most often - in 45-63% of cases, colonic intussusception - in 15%, ileocolonic intussusception - in 12-17%, small intestinal intussusception - in 10.7%. Multiple intussusception occurs in 0.4-3.6% of cases, and complex (multicylinder) - in 8.3% [2, 4]. The most frequent causes of intestinal intussusception in adults are organic causes, which include neoplasms, pedicled polyps, and a stump of the appendix [3, 5]. Any fixed mechanical obstruction or local morphological changes in the intestinal wall can retract into the intestinal lumen, then move through the intestine with a peristaltic wave. Another group of causes can be infectious diseases in which ulcers or inflammatory infiltrates form in the intestine. They cause discoordination of peristalsis - intensification of segmental peristalsis in the intestine's "attempts" to "get rid" of the foreign entity. This seems to be the pathogenetic mechanism triggering the process of intussusception. A similar mechanism of intussusception occurs in case of hemorrhages in its wall (intramural hematomas of different genesis: spontaneous,

posttraumatic, Schoenlein-Henoch disease, etc.). In addition, hyperplasia of lymphoid tissue, scar constriction, Meckel's diverticulum, helminth infestation, etc. can be the causes of intussusception. [2]. Acute intestinal obstruction (AIA) is one of the complex problems of abdominal surgery characterized by the development of severe complications and high postoperative mortality. The issues of surgical treatment of UCI continue to be relevant at present, despite certain achievements of surgical techniques and the use of modern methods of detoxification and antibacterial therapy.

According to different authors, UCL makes up 3.8-6.1% of all urgent surgical diseases of the abdominal cavity. The number of patients with adhesive intestinal obstruction is increasing and makes up from 50 to 93.3% of all types of mechanical obstruction of non-tumor genesis. According to the data intestinal obstruction is complicated by peritonitis in 45-85% of patients.

Despite the fact that in recent years there has been significant progress in the treatment of patients with acute surgical diseases of the abdominal cavity, the issues of surgical treatment and drainage in peritonitis caused by UCN remain largely debatable. One of the reasons for unsatisfactory results is inadequate execution of surgery and indications for abdominal cavity drainage. The eternal dilemma: whether it is necessary to drain the abdominal cavity after eliminating UCI and peritonitis and, if so, by what method, makes surgeons seek new approaches to peritonitis management. The following methods have been suggested for this purpose: peritoneal dialysis, fractional and flow-fractional method of abdominal cavity lavage. However, the widening of indications for abdominal cavity drainage promotes the repeated formation of peritoneal adhesions in the drainage area and the development of UCN. When operating on patients, surgeons always have to deal not only with the



adequate management of peritonitis, but also with the optimal prevention of peritoneal adhesions.

Intussusception is subdivided into intussusception:

1) according to the etiological characteristic: primary (no apparent cause of intussusception); secondary (develops when the intestinal loop is affected by a tumor or polyp);

2) by localization: small intestine (small intestine to small intestine); large intestine (large intestine to large intestine); small intestine (ileum to large intestine), gastric intussusception; jejunal intussusception to stomach; intestinal loop intussusception through intestinal fistula or unnatural anus;

3) depending on the direction of invagination: descending invagination (isoperistaltic) and ascending invagination (antiperistaltic);

4) by the number of intussusception - single and multiple;

5) according to the structure of the invaginate wall - three-cylinder (simple), five-, seven-cylinder (complex);

6) by clinical course: acute, subacute, and chronic forms.

In most cases, simple intussusception is observed, in which 3 cylinders are formed: an external cylinder and 2 internal cylinders. The apex of the intussusception is called the "head". In the area of the head, the inner cylinder passes into the middle one, but more complex (double and triple) invaginates can also occur. Invagination together with the intestine and mesentery is possible, which often causes strangulation obstruction with circulatory disorders and development of necrotic changes in the affected part of the intestine. It is not uncommon for intestinal infiltration to be chronic and to last for quite a long time. This difference in the course of intussusception depends on the degree of blood circulation disorder and patency in the infiltrated intestinal section. Circulatory disorder is first expressed by venous stasis, and then by thrombosis of venous and arterial vessels, which is accompanied by necrosis of intestinal wall, rupture of intussusception, infection of abdominal cavity with development of peritonitis [3].

The clinic of the disease is determined by the age of the patient, the speed of intussusception, the type of intussusception, the length of the intussusception, the nature of the intestinal contents at the time of intussusception, and changes in the intussusception.

Classical symptoms of intussusception:

1) acute, then recurrent pain in the form of contractions;

2) presence of a dense elastic, mobile, painful mass palpable through the abdominal wall or rectum (Rush's symptom);

3) blood coming out of the anus (Crouvelier's symptom) during defecation or the presence of blood in the lavage after an enema.

At the same time, it should be pointed out that the classic triad in adults is not always found. Lebedev (1968) gave a list of symptoms that can occur in typical and atypical forms of intussusception.

typical and atypical forms of intussusception:

1 - sudden onset of the disease;

2 - normal temperature in the patient

3 - сильные, схваткообразные боли в животе;

4 - vomiting, often repeatedly;

5 - uncontrollable bloody vomiting in eu-nogastric intussusception (in the presence of gastroenteroanastomosis);

6 - presence of a characteristic "tumor" in the abdomen, with a soft abdominal wall;

7 - increase and recurrence of pain on palpation of the "tumor";

8 - "desolation", abdominal depression in the right ileocecal region in case of ileocecal intussusception (Duns' symptom);

9 - Delayed excretion of feces and gases;

10 - tenesmias (they may not be present in small intestinal intussusception);

11 - Bloody feces or a bloody discharge on finger examination or in lavage waters;

12 - zation or relaxation of the sphincter of the anus;

13 - sometimes determination of an intussusception by rectal examination;

14 - Occasionally invaginate prolapse through the anus;

15 - data of blood tests, before the development of intoxication they are unchanged;

16 - characteristic shape of the filling defect in the area of invaginated on radiological examination.

Instrumental diagnosis of intussusception involves an ultrasound examination of the abdominal organs. The main task of the study is to detect a cylindrical intestinal mass confirming the diagnosis. During ultrasound examination intestinal intussusception looks like a formation with many concentric rings of alternating layers of mucosa and muscular membrane. Abdominal radiography reveals specific signs of intestinal obstruction (difficulty or inability to pass feces through the intestine) caused by intussusception. The method can also be augmented by the use of an air or barium enema to pinpoint the site of intussusception. In complex diagnostic cases, if possible, it is advisable to perform a CT scan of the abdominal organs for a more detailed assessment of the intestine and possible damage or intestinal obstruction.

In children with intussusception, repeated purging enemas can be an effective conservative therapy. In



adults, conservative measures are seldom effective, even if the disease is of short duration. Physical attempts at disinvagination through the abdominal wall in adults, especially the elderly, are unacceptable. Loss of time to attempt conservative treatment is directly proportional to the amount of time lost to emergency surgery for vital signs. Such types of intussusception as retrograde, jejuno gastric (postoperative), complex intussusception, intussusception of the appendix, Meckel's diverticulum cannot be treated conservatively

Intraoperative disinvagination is admissible only in early stages - when invaginates are recent, small and not fixed. For this purpose after preliminary novocaine blockade of mesentery of the invaginated part of intestine and mesentery root of small intestine the intussusception is taken in the left hand, and then the right hand, carefully pressing on the head, tries to achieve its disintegration. If resistance is felt, disinvagination should be stopped. If disinvagination is successful, one should not move the contents accumulated above the intussusception into the diverting loop of the intussusception by "squeezing", because "massage" of the intestine by squeezing can lead to thrombosis both in the mesenteric vessels and the microcirculatory channel. In addition, long-lasting intestinal paresis occurs after "squeezing" [4]. Once the viability of the intestine has been determined, the destructively altered segment of the small intestine is resected. If disinfection is not indicated or is not feasible, the infiltrated intestine and the intestine "case" are resected according to the classical principles of intestinal resection with interintestinal anastomosis.

We would like to share our experience in diagnostics and treatment of patients with intussusception. Since 2000 we have operated 11 patients with different forms of intussusception. These were patients aged from 1 to 46 years, including 4 children, 3 women and 4 men. Three patients were operated in the surgical department of the nodal clinical hospital at Grodno station. In two cases the etiological cause of the obstruction was polyposis of the small intestine. A 28-year-old patient was found to have a case of multilevel (3 levels) small intestinal intussusception during surgical intervention. An operation was performed - intestinal resection and polypectomy. In another case of a 37-year-old female patient, disinvagination and polypectomy were limited. Another patient was transferred from Mostovskaya CRH and hospitalized with intestinal obstruction and peritonitis. The duration of the disease was 4 weeks. The cause of the obstruction was ileocecal intussusception. Due to the presence of necrotic changes in the ileum and cecum, the section of the ileum and right hemicolectomy with

ileotransverse anastomosis were performed. No causes of intussusception were identified.

Another 7 patients diagnosed with intussusception were operated by us during our work in hospitals of the Republic of Uzbekistan where there is no division into adult and pediatric surgery. In 2 patients, aged 19 and 20 years old, small intestinal intussusception was detected, the period from the beginning of the disease to admission to the hospital was more than 5 days. In both cases we performed partial disinvagination, resection of necrotized section of the ileum, right-sided hemicolectomy with ileotransversostomy. A 40-year-old female patient had colonic intussusception at the level of the transverse colon as the cause of obstruction. A section of the transverse colon was resected with end-to-end anastomosis. In all cases the cause of intussusception was intestinal hypermotility due to acute diarrheal diseases. Four children from 1 to 4 years old were operated on. These were cases of ileocecal and small intestinal intussusception. In one case it was possible to perform disinvagination and cecopexy, in 2 cases due to late medical aid seeking, ileocecal resection, right-sided hemicolectomy with ileotransversus-anastomosis had to be performed. We would like to mention especially a case of intussusception in a child with prolapse of intussusception through the anus. On admission to the hospital the condition was evaluated as severe. The abdomen was swollen, painful in all parts, positive symptoms of peritoneal irritation. A soft elastic mobile painful mass with a sausage-like shape was palpated along the course of the large intestine. There was no difficulty in diagnosis, as the head of the invaginated protruded through the anus up to 20 cm. Therefore, there was no need for additional diagnostic studies.

CONCLUSIONS: Widespread introduction of intestinal decompression into the practice of surgical treatment of UCI and peritonitis makes it possible to achieve removal of stagnant intestinal content, improvement of blood supply, microcirculation and early restoration of intestinal motor activity. There are many techniques of intraoperative intubation of small intestine, for which various designs of probes have been proposed. However, due to their technical imperfection it is not always possible to remove the intestinal contents adequately; therefore, the search for more effective ways of evacuation of toxic intestinal contents continues. One of the most serious complications of DIC is the failure of interintestinal anastomosis and development of peritonitis, which necessitates relaparotomies, resulting in mortality or disability of patients. Therefore, the questions of adequate intestine



intubation, decrease of intoxication, restoration of intestine motility, abdominal cavity drainage in case of peritonitis, use of atraumatic, inert, elastic suture material when performing bowel resection in patients with acute intestinal obstruction require their solution.

LITERATURE:

1. Alimov A.N., Isaev A.F., Safronov E.P. Surgical tactics and prospects of endosurgery of closed abdominal injuries in severe combined injury // Surgery. - 2006. - №6. - С. 34-36.
2. Briskin B.S., Smakov G.M., Karimova S.K., Potapova O.Yu. - M., 1997. - С. 82-86.
1. 3.Khamdamov B.Z. Indicators of immunocytocine status in purulent-necrotic lesions of the lower extremities in patients with diabetes mellitus.//American Journal of Medicine and Medical Sciences, 2020 10(7) 473-478 DOI: 10.5923/j.ajmm.2020.- 1007.08 10.
3. Khamdamov I.B., Khamdamov A.B. Classification and properties of mesh explants for hernioplasty of hernial defects of the anterior abdominal wall (review) //Биология и интегративная медицина 2021, 5(52), 12-21
4. Minnullin M.M., Krasilnikov D.M., Tolstikov A.P. Damages of duodenum. Diagnosis. Surgical treatment // Bulletin of Modern Clinical Medicine. - 2015. - Vol. 8, appendix. 1. - С. 81-85.
5. Ergashovich, K. B., & Ilhomovna, K. M. (2021). Morphological Features of Human and Rat Liver and Biliary Tract Comparisons (Literary Review). International Journal of Discoveries and Innovations in Applied Sciences, 1(4), 27–29. Safronov D.V., Bogomolov N.I. Surgical treatment of diseases and injuries of the colon // Vestn. chir. 2005. No 2 21-25 pp.
6. Wick M., Ekkemkamp A., Muhr G. Epidemiologie des polytraumas // Chirurg. — 1997. — Vol. 1, №68. — P. 1053-1058.
7. McGahan J.P., Rose J., Coates T.L., et al. Use of ultrasonography in the patient with acute abdominal trauma // J. Ultrasound Med. — 1997. — Vol. 16, №10. — P. 653-662.
8. Majewski J.B. Diagnostic laparoscopy at an acute abdomen and trauma // Surg. endosc. — 2000. — Vol. 14, №10. — P. 930-937.
9. Sheyanov S.D. Differential tactics for colonic injury using precision surgical techniques // New Surgical Archives. - 2001. - T. 1, №1. - С. 12-28.
10. Kamalova M., Khaidarov N., Shomurodov K. Microscopic examination of brain tissue in hemorrhagic stroke in uzbekistan //Матеріали конференцій МЦНД. – 2021.
11. Kamalova, M., Ismatova, S., Kayumova, S., Gulomova, S., & Akhmedova, J. (2021). Blood supply to the shoulder and forearm muscles in the human foetus. *Збірник наукових праць ЛОГОΣ*.
12. Krasilnikov D.M., Nikolaev Y.Y., Minnullin M.M. Prevention of enteroenteroanastomosis suture failure // Critical Care Surgery and Oncology. - 2012. - №1. - С. 38-39.