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CLINICAL CASE OF INTUSSUSCEPTION AGAINST A BACKGROUND OF INTESTINAL INFECTION IN A CHILD. CLINICAL CASE

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Abstract

Intestinal intussusception is an intestinal obstruction caused by the insertion of one intestine into another. Intestinal intussusception is the most frequent form of acquired intestinal obstruction in childhood, accounting for 70-80% of all its types [2]. According to various authors, diagnostic errors in intestinal intussusception at the stage of primary care make up 34 - 88.8%, which determines late admission of patients and, of course, worsens the results of treatment. It should be emphasized that in recent decades there have been changes in the clinical picture and course of the disease, an increase in the number of recurrent intussusception [2].

In this article, we presented a case of fatal intestinal intussusception in a 2-month-old child registered in the pediatric department of the regional infectious disease hospital of Abay region, Republic of Kazakhstan. The development of intestinal obstruction against the background of acute intestinal infection is not uncommon, but is not often described in the literature [2].

The article will be interesting to medical workers who first meet with patients with intestinal intussusception, namely doctors of "emergency and urgent care", district pediatricians, general practitioners, doctors of infectious and somatic hospitals.

Keywords: *intussusception, children, intestinal infections.*

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Резюме

КЛИНИЧЕСКИЙ СЛУЧАЙ ИНВАГИНАЦИИ КИШЕЧНИКА НА ФОНЕ КИШЕЧНОЙ ИНФЕКЦИИ У РЕБЕНКА. КЛИНИЧЕСКИЙ СЛУЧАЙ

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Инвагинация кишечника — непроходимость кишечника, обусловленная внедрением одной кишки в другую. Инвагинация кишечника является наиболее частой формой приобретенной кишечной непроходимости в детском возрасте, составляя 70—80% от всех ее видов [2]. По данным различных авторов, диагностические ошибки при инвагинации кишечника на этапе первичного звена составляют 34 - 88,8%, что определяет позднее поступление больных и, безусловно, ухудшает результаты лечения. Необходимо особо отметить, что в последние десятилетия происходят изменение клинической картины и течения заболевания, увеличение числа повторных инвагинаций [2].

В статье мы представили случай с летальным исходом, инвагинации кишечника у ребенка 2 месяцев, зарегистрированный в детском отделении областной инфекционной больницы области Абай, республика Казахстан.

Статья будет интерсна медицинским работникам, кто первыми встречаются с пациентами с инвагинацией кишечника, а именно врачам «скорой и неотложной помощи», участковым педиатрам, врачам общей практики, врачам инфекционных и соматических стационаров.

Ключевые слова: *инвагинация, дети, кишечные инфекции.*

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Түйіндеме

БАЛАДА ІШЕК ИНФЕКЦИЯСЫ ФОНЫНДА ІШЕК ИНВАГИНАЦИЯСЫНЫҢ КЛИНИКАЛЫҚ ЖАҒДАЙЫ. КЛИНИКАЛЫҚ ЖАҒДАЙ

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Ішектің инвагинациясы - бір ішектің екіншісіне енуіне байланысты ішек өтімсіздігі. Ішектің инвагинациясы балалық шақта жүре пайда болған ішек өтімсіздігінің ең көп таралған түрі болып табылады, оның барлық түрлерінің 70-80% құрайды [2]. Әр түрлі авторлардың пікірінше, бастапқы кезеңдегі ішек инвагинациясының диагностикалық қателіктері 34 - 88,8% құрайды, бұл пациенттердің кеш келуін анықтайды және емдеу нәтижелерін нашарлатады. Соңғы он жылдықтарда аурудың клиникалық көрінісі мен ағымының өзгеруі, қайталанған инвагинациялар санының артуы байқалады [2].

Мақалада біз Қазақстан Республикасы Абай облысы облыстық жұқпалы аурулар ауруханасының балалар бөлімшесінде тіркелген 2 айлық балада ішектің инвагинациясының өліммен аяқталған жағдайын ұсындық.

Мақала ішек инвагинациясы бар науқастармен алғаш кездескен медицина қызметкерлеріне, атап айтқанда "жедел және шұғыл көмек" дәрігерлеріне, үлескілік педиатрларға, жалпы тәжірибе дәрігерлеріне, жұқпалы және соматикалық стационарлардың дәрігерлеріне қызықты болады.

Түйінді сөздер: *инвагинация, балалар, ішек инфекциялар.*

Дәйексөз үшін:

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Relevance

Intestinal intussusception in children is the result of temporary age-related discoordination of intestinal peristalsis with the formation of areas of spasm, which contributes to the intrusion of the intestine. The most common causes of peristaltic discoordination are intestinal diseases (dysentery, dyspepsia), as well as improper feeding and complementary feeding in infants [6]. The onset of the disease is facilitated by certain anatomical features of the intestine in infants aged 3-9 months, more often in boys (common mesentery, functional insufficiency of the Bauhin valve), as well as an increase in lymph nodes and fatty plaques in the ileocecal angle, developing as a result of enterovirus infection [6]. Intussusception is the most common type of acute intestinal obstruction in children and can occur at any age. Intussusception is more common between the ages of 4 and 9 months (85–90% of cases). Boys are affected twice as often as girls [4].

According to various authors, diagnostic errors in intestinal intussusception at the primary care stage range from 34 to 88.8%, which determines the late admission of patients and, undoubtedly, worsens treatment outcomes [2]. In pediatric surgical hospitals, diagnostic errors reach 12-16%. The mortality rate for intussusception ranges from 0.5 to 1%, reaching 6 to 15% in complicated cases. The objective difficulties of diagnosis and treatment are largely associated with the presence of intercurrent diseases, as well as the limitations of traditional X-ray diagnostics [7,8].

The first to encounter patients with intussusception are emergency doctors, district pediatricians, and often doctors on duty at infectious disease and somatic hospitals. It is during the initial examination that it is important to make the correct diagnosis and take the appropriate decision. It should be noted that in recent decades there have been changes in the clinical picture and course of the disease, with an increase in the number of recurrent intussusceptions [2,8].

The objective difficulties in diagnosis and treatment are largely related to the presence of intercurrent diseases, the limitations of traditional X-ray diagnostics, and continuing disagreements regarding the choice of conservative or surgical treatment methods and their timing [7]. Traditionally, the indications for surgical treatment are considered to be: more than 12 hours since the onset of the disease, age over 1 year, and recurrence of intussusception [1,3,5].

Aim: to analyses the clinical case of a patient with intussusception.

Materials and methods: A retrospective analysis of the case was performed using the medical records of an in-patient. Diagnostic and therapeutic procedures were performed in accordance with the approved clinical protocol set out in the Clinical Protocol of the Ministry of Health of the Republic of Kazakhstan. The consent of the patient's parents was obtained for all procedures performed. The publication of the treatment results has been approved by the clinic's management.

Results

A two-month-old boy was admitted to the pediatric ward of the regional infectious diseases hospital on the third day of illness with complaints of a rise in body temperature to 38°C, repeated vomiting and loose stools up to six times. From the medical history: the child had been ill for three days, starting with loose stools up to 3-4 times, followed by an increase in body temperature to 38°C, vomiting once, and restlessness. On the second day of illness, he was examined by a surgeon, and surgical pathology of the abdominal organs was ruled out. On the third day of the illness, the diarrhea increased to 6 times a day, and the mother and child went to the regional infectious disease's hospital. Upon admission to hospital: the child's general condition is moderate due to intoxication and diarrhea syndromes. Consciousness is clear. Well-being is moderately impaired, lethargic. According to the mother, the child feeds well. Meningeal signs are negative. Skin is pale, no rash. Skin folds smooth out immediately. Turgor is preserved. Eyes are normal. Tongue is dry, coated with white plaque. Lips are dry. Lungs: percussion reveals clear pulmonary sounds; auscultation reveals vesicular breathing, no rales. Respiratory rate 44 per minute. Saturation 98%. Heart sounds clear and rhythmic. Heart rate 132 per minute, blood pressure 80/50 mmHg. Abdomen soft, painless, palpable in all areas. Liver is not enlarged, painless on palpation. Spleen is not enlarged. Stools are loose, watery, without pathological impurities, up to 6 times a day. Anus is closed. Urination is preserved, painless. Considering the complaints, medical history and physical examination, a preliminary diagnosis was made: acute intestinal infection, moderate gastroenteritis. The child's condition is deteriorating, with delayed breathing, restlessness, increasing lethargy, abdominal distension and pain, and decreased urine output.

Table 1.

Dynamics of complete blood count indicators.

Indicators	Day of admission		
	first day	second day	third day
WBC (*10^9/л)	20,18	65,46	51,46
RBC (*10^{12}/л)	5,58	5,33	4,28
HBG (g/l)	152	148	113
PLT (*10^9/л)	565	726	598
Neu %	51,3	78,8	84,4
Lym %	39,1	14,4	8,1
Mon %	8,8	6,5	7,4
Eos %	0,8	0,3	0,1
ESR (mm/hour)	3	2	3

Upon admission, comprehensive treatment was provided: combined antibiotic therapy, oxygen therapy, anti-shock therapy (hormones, intravenous infusion), correction of acidosis, cardiotropic, anticonvulsants, immunotherapy (plasma, immunoglobulins).

Given the deterioration in condition, anxiety, bloating and abdominal pain, sharply inflammatory blood tests (hyperleukocytosis, neutrophilia), to rule out surgical pathology of the abdominal organs, intestinal developmental abnormalities, peritonitis, the patient was re-examined by a surgeon on the second day. The surgeon's conclusion: no evidence of surgical pathology of the abdominal organs was found.

On the third day of hospitalization: condition extremely serious, septic (according to blood tests, hyperleukocytosis, neutrophilia, thrombocytosis). Clinical signs of hemorrhagic syndrome, according to blood gas analysis - decompensated metabolic acidosis. Consciousness and well-being are severely impaired — deep lethargy. Skin is pale, extensive bruising at venipuncture sites (elbow bends, feet), bleeding from blood collection sites (stopped dynamically). Skin turgor and elasticity are reduced (especially on the thighs). Scrotal edema. Breathing is regular, pulse oximetry readings are normal with oxygen therapy. Breathing in the lungs is stiff, no wheezing. Heart sounds are muffled, rhythm is regular. Pulse in radial arteries is reduced. Blood pressure on the monitor is within normal limits. Abdomen is soft. Intestinal peristalsis is audible. Diarrhea of enteritic nature, stools are watery. Urinates through a catheter - urine is yellow. By decision of the consultation, a repeat consultation with a surgeon was scheduled to rule out surgical pathology of the abdominal organs. The surgeon ruled out surgical pathology of the abdominal organs and, due to the child's inability to be transported, recommended an ultrasound scan of the abdominal organs.

Results of abdominal ultrasound. Distended intestinal loops. Free fluid is located in the abdominal cavity, the contours of an atonic stomach with contents are visible. Moderate hepatomegaly. Effusion around the liver and lower abdomen.

An abdominal X-ray in the frontal projection shows no signs of intestinal obstruction or perforation of hollow organs. A small amount of air without fluid levels is visible in the intestines.

Despite comprehensive treatment and examination, and resuscitation measures carried out on the third day of hospitalization, death was confirmed. Cause of death: cerebral edema with occipital herniation.

During the autopsy, four invaginations of the small intestine were found, formed in areas where there were no circular muscles or nerve trunks. In addition, 40 ml of whitish fluid was found in the abdominal cavity, 21 ml of whitish fluid in the right pleural cavity, and 18 ml of whitish fluid in the left pleural cavity (Photo 1).

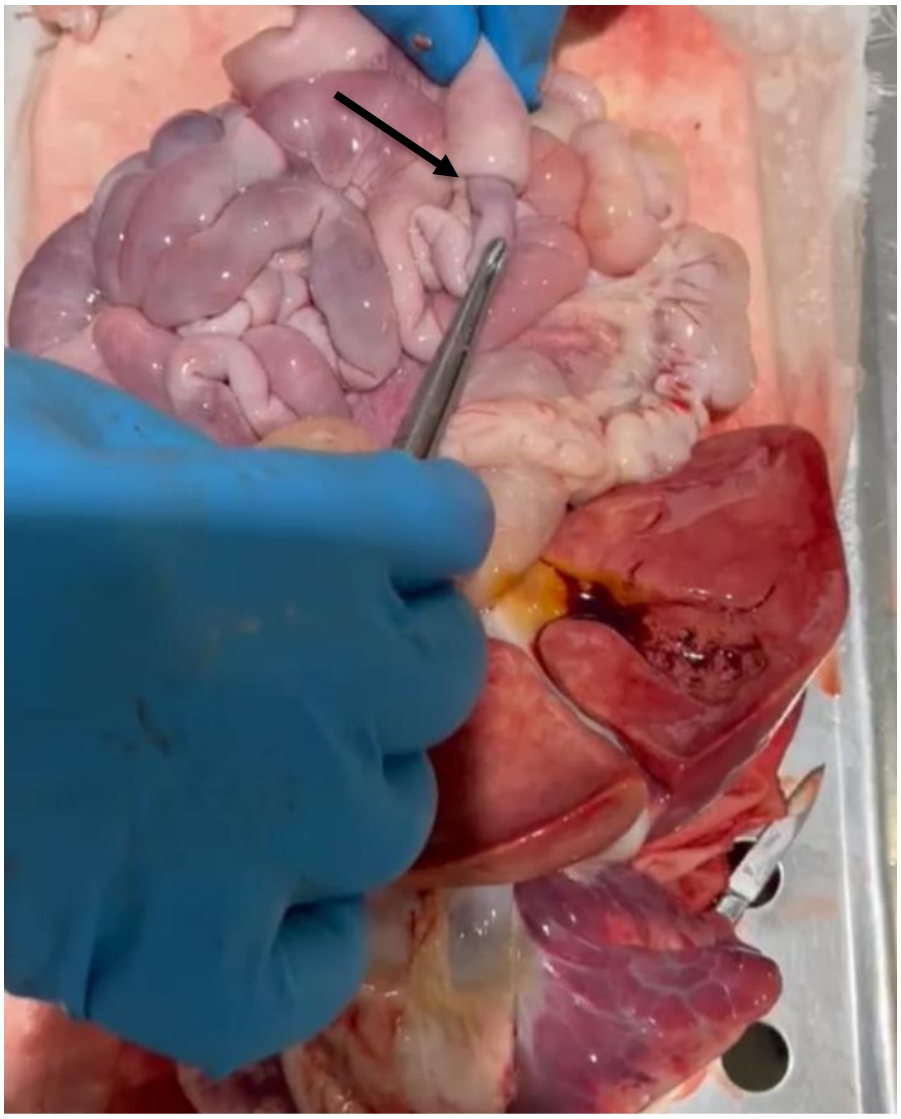

Photo 1. Intussusception in the intestine.

Based on anamnestic, clinical, laboratory and instrumental data, as well as the results of a pathological autopsy, the following post-mortem diagnosis was made: Primary diagnosis:

Combined disease:

1) Intussusception (in four places with an intussusception size ranging from 1.4 cm to 2.5 cm in the area of the Bauhin valve).

2) Acute intestinal infection, gastroenteritis, severe. Complications: Acute peritonitis. Toxic encephalopathy (grade 2 neurotoxicosis). Cerebral edema. Disseminated intravascular coagulation (defibrination phase). Grade 3 respiratory failure. Grade 3 cardiovascular failure. There is a coincidence between the clinical and pathological diagnoses.

Conclusion:

This clinical case demonstrates once again that intussusception is most severe in children during the first three months of life, who may lack typical symptoms and rapidly develop peritonitis and shock. Intestinal infection complicates the timely diagnosis of intussusception in young children [10].

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