ANATOMICAL FORMS AND FEATURES OF THE CLINICAL COURSE OF PARTIAL INTESTINAL OBSTRUCTION IN NEWBORNS AND INFANTS

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https://doi.org/10.5281/zenodo.10205638

Abstract. *This article focuses on the importance and specific features of the issue given in the subject and the related results from the discussion will be illustrated in the percentage units.*
Keywords: *duodenal obstruction, CSCI, cesarean, membranous obstruction, chronic duodenal obstruction.*

Actuality. According to WHO, more than 5.5% of children are born with congenital birth defects worldwide [8]. Many works have been devoted to this pathology; various forms of atresia have been studied in detail. However, publications on partial intestinal obstruction (PIO), which is a disease heterogeneous in topographic and anatomical variants, are reduced mainly to the statement of individual forms and are of an illustrative nature. There are no reports in the literature about the clinical aspects, diagnostic methods and treatment tactics for this PCI. Available sources provide information only about the most common types of PCI – membranous obstruction of the gastrointestinal tract (GIT), chronic duodenal obstruction [7]. They do not reflect the diversity of clinical course and types of congenital partial intestinal obstruction (CPI). It is known that partial intestinal obstruction in newborns and infants can be caused by complications of acute inflammatory bowel diseases [1,4,6,9]. This requires differential diagnosis and individual treatment tactics.

Despite the improvement in the quality of surgical care and intensive care for young children, the results of treatment are not encouraging. According to WHO, in many countries, malformations in newborns occupy one of the leading places in the structure of mortality of full-term children and determine disability rates from childhood. Therefore, the problem of congenital malformations has not only medical, but also social significance [8,11-12]. Currently, many scientific studies devoted to the health of children are aimed at the main critical periods of life: antenatal development of the fetus, the birth process, neonatal periods (especially early) and infancy. At the level of treatment and preventive institutions, the main task is to introduce a clear monitoring system to monitor the situation for the prevention of congenital malformations. Identifying early negative trends, taking urgent measures to minimize the consequences of an increase in developmental anomalies, promptly solving tactical problems while simultaneously informing health authorities are an effective tool in solving this problem [2,5]. Advances in modern perinatal medicine and pediatric surgery make it possible to significantly change approaches to congenital developmental anomalies, taking them into account in the prenatal period and postnatally through surgical intervention [3,10,12].

The tasks of improving the diagnosis and surgical treatment of children of various age groups with PCI remain relevant.

The aim of research research - to study the frequency and characteristics of clinical manifestations of CSCI in newborns and infants based on materials from the clinical databases of the Department of Hospital Pediatric Surgery of the Tashkent Pediatric Medical Institute.

Materials and methods. In the Republican Training, Treatment and Methodological Center for Neonatal Surgery at the Russian Orthodox Church at the clinical base of the Department of Hospital Pediatric Surgery of the Tashkent Pediatric Medical Institute in 2015-2022, there were 123 children aged from 1 day to 1 year with various forms of CVCI. There were 99 newborns (80.5%); up to 3 months – 19 (15.5%); up to 7 months – 3 (2.4%); up to 1 year – 2 (1.6%). Among the patients, boys predominated - 51 (41.5%), girls were 72 (58.5%).

Patients underwent complex clinical, laboratory and radiation diagnostic methods: ultrasound, radiological (radiography of the abdominal organs, contrast study of the gastrointestinal tract), irrigography. In 7 cases, computed tomography (CT) of the abdominal organs was performed. Data from preoperative diagnostics and intraoperative examination of the abdominal organs made it possible to verify various forms of CCCI. In 105 (85.4%) patients, signs of high partial intestinal obstruction were noted, in 18 (14.6%) - low.

Results and discussions. With high partial intestinal obstruction, anatomical obstacles of the duodenum caused partial obstruction due to malformations of the duodenum itself: stenosis - 6 (5.7%), membranes - 18 (17.1%); external compression of the duodenum (duodenum) by periduodenal adhesions – 11 (10.5%); ring-shaped or pincer-shaped pancreas – 10 (9.5%). In 60 (57.2%) cases, high intestinal obstruction was caused by malrotation. The causes of low partial intestinal obstruction were: stenosis of 3 (16.7%) intestines of various locations within the jejunum - 1; ileal – 1; and large intestine – 1. The membranous form of obstruction in these locations was noted in 4 (22.2%) cases. In 4 (22.2%) children, various forms of intestinal malrotation were accompanied by clinical and radiological signs of low intestinal obstruction. External intestinal compression was noted in 7 (38.9%) patients.

The main method for diagnosing congenital intestinal obstruction is antenatal ultrasound examination of pregnant women. It allows you to determine the development and condition of almost all organs and systems of the fetus in dynamics.

During ultrasound examination of the abdominal organs, special attention was paid to identifying the main and indirect signs of intestinal obstruction: fluid deposition in the intestinal lumen, differences in intestinal diameter, thickness and uniformity of the wall, the nature of peristalsis in different segments; length, localization of the area of dilatation and narrowing of the intestine; mobility of intestinal loops; the presence of interintestinal adhesions, a vermiform appendix with clarification of its location; accumulation of effusion in the abdominal cavity. With intestinal obstruction, a characteristic echographic sign is dilation of the stomach and intestines above the level of obstruction.

Due to stagnation of intestinal contents, heterogeneous contents are determined by point or linear dense inclusions with periodic increases in peristaltic movements; the intestinal walls are thickened and edematous. Free fluid in the abdominal cavity is determined. Sonography allows you to differentiate between high and low intestinal obstruction.

Duodenal obstruction - the main and most common type of high intestinal obstruction - is easily diagnosed echographically; the symptom of a double bubble is clearly defined.

Dilatation of the duodenum is observed, peristalsis is weakened, and the underlying intestinal fragments appear to have fallen asleep. After probing, the size of the duodenum

decreases slightly. A feature of high intestinal obstruction in intestinal malrotations (13) is that when the duodenum is compressed by embryonic adhesions starting from the proximal part, the sign of a double bubble is not observed in ultrasound and x-ray studies. With low intestinal obstruction (6), unevenly dilated fragments of the intestine with pendulum-like movements of the contents in its lumen are determined echographically.

Depending on the location of the obstruction along the small intestine, the number of horizontal fluid levels ranges from three to many. The diameter of the intestine above the site of obstruction increases several times compared to the underlying segments. Violation of juice circulation in the intestines contributes to the development of hypoproteinemia, water-salt disorders, increased permeability of the intestinal wall with accumulation of fluid in the abdominal cavity.

X-ray examination remains the main method for diagnosing CSCI. Indications and advisability of its use individually or in combinations are determined individually. The initial echography data in all cases is supplemented by a survey radiography of the abdominal cavity (in newborns with chest coverage) with the patient in an upright position. The most common - 73 (69.5%) - findings are two gas bubbles with horizontal liquid levels. This is consistent with a distended stomach and duodenum and indicates obstruction of the distal duodenum.

Multiple levels characteristic of low intestinal obstruction were detected in 6 (33.3%) children. A distended stomach without pneumatization indicates intestinal malrotation.

The results of ultrasound and plain radiography in 49 (39.8%) cases were sufficient to determine the pathology of the abdominal organs and indications for surgery. In 74 (60.2%) cases, additional radiological examinations were required. The presence of a distended stomach, uneven distribution of gas in the intestine, accumulation of fluid in the lower parts of the abdominal cavity (mainly in the intestine to the right or left of the spine, in the mesogastric region) are characteristic of malrotation and partial intestinal obstruction. In these cases, irrigography is necessary, which allows you to determine changes in position, length, diameter, and characteristic bends of the colon.

To complement the results of plain radiography and irrigography in cases of partial intestinal obstruction, 74 patients underwent passage of a contrast mass through the gastrointestinal tract.

With malrotation, changes in the anatomical shape of the duodenum are noted in the form of the absence of bends and its syntopy with surrounding organs; atypical location of all or part of the colon, depending on the type of intestinal rotation disorder.

The course of anomalies of intestinal rotation and fixation in infants depends on the degree of compression or volvulus (partial, complete) both in individual parts of the small intestine and throughout the entire midgut. A combination of internal and external types of obstruction with intestinal malrotation in various combinations is possible. There is high variability in the state of intestinal blood supply without necrosis in congenital volvulus. Severe local or total ischemic intestinal disorders are characteristic of rotational disorders. A severe complication of intestinal obstruction is ischemia followed by necrosis and the development of peritonitis. Disruption of mesenteric circulation in the basin of the superior mesenteric vessels often manifests itself in cases of intestinal rotation defects of a recurrent course.

With CSCI and malrotation in children, especially newborns, along with the phenomena of intestinal obstruction, signs of respiratory disorders, disturbances of hemo- and liquorodynamics,

disseminated intravascular coagulation syndrome and sclerema were noted. In newborns, the severity of the general condition was largely due to somatic and neurological disorders than to manifestations of intestinal obstruction. Signs of intestinal obstruction were obscured by symptoms of such concomitant diseases as intrauterine infection, trauma during childbirth, perinatal lesions of the central nervous system, asphyxia alone or in combination with these conditions.

Analysis of clinical material indicates a relationship between the severity of maladjustment in newborns with VCCI and the clinical status of the mother and the course of the birth process; the nature of the underlying disease in newborns and accompanying conditions.

Childbirth was spontaneous in 92 (74.8%) cases; surgical (cesarean section for severe gestosis, preeclampsia, weakness of labor, with pelvic and breech presentation of the fetus, placenta previa) - in 31 (25.2%) cases. 39 (31.7%) newborns with CCI required resuscitation. Intrauterine growth retardation as a negative factor in neonatal adaptation aggravates the course of congenital intestinal obstruction, complicates surgical intervention, and negatively affects the results of treatment. The variability of clinical manifestations of CSCI is determined by its localization, the nature of the complications that arise, concomitant somatic diseases and associated anomalies. The likelihood of developing neonatal maladjustment in newborns with CSCI increased with concomitant developmental defects and somatic pathology.

Conclusion. When children are born, vigilance regarding CSCI is necessary. The risk of manifestation of this pathology with an unclear clinical picture from the gastrointestinal tract requires hospitalization of children in a specialized surgical hospital. A detailed analysis of the medical history and life of the child, high-quality instrumental examinations contribute to timely diagnosis and surgical treatment.

The criterion for the effectiveness of pregnancy and newborn management tactics is the improvement of perinatal outcomes and minimization of the consequences of congenital malformations. Measures to eliminate the causes leading to congenital malformations and the implementation of a comprehensive preventive program, targeting, early correction of congenital malformations made it possible to reduce the number of newborns with incurable congenital malformations, increase the detected defects during ultrasound examination of the fetus, the frequency of cases of partial and complete disability, and improve the quality of life of these children.

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