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## MORPHOLOGICAL INDICATIONS OF THE EFFICACY OF A CONSERVATIVE APPROACH TO THE TREATMENT OF DOLICHOSIGMIA IN CHILDREN

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**Abstract:** The paper presents the results of clinical observation of 143 children with pathology of the large intestine accompanied by colostasis, constipation and dysbacteriosis. The analysis of X-ray contrast studies, colonoscopic and morphological examination in a comparative aspect is given. Analyzing the results of treatment of colonic dysbacteriosis the authors studied the colonoscopic and morphological signs of efficacy of conservative treatment of dysbacteriosis in dolichosigm children. Conclusions are drawn from the results of the observation.

**Keywords:** Dolichosigma, megacolon, constipation, colostasis, conservative treatment, dysbacteriosis, morphology, colonoscopy.

### INTRODUCTION

A number of authors provide information about the conditions for the development of such diseases as anemia, iodine deficiency, diabetes mellitus, osteoporosis, etc., among various segments of the population that do not follow the principles of a healthy diet (3,4,5,6,7,9,10,11,12). A number of scientific studies are carried out worldwide in order to optimize a new approach to the treatment of morphofunctional changes of the "S"-shaped colon in dolichosigma in children (1,2,8). In this regard, of particular importance are scientific studies aimed at a comprehensive assessment of morphofunctional changes of the sigmoid colon in children with dolichosigma depending on age and sex, a comparative analysis of treatment results by traditional and new approach in children with dolichosigma, evaluation of evacuatory function and colonic microflora in dolichosigma, development of effective methods and techniques to eliminate factors negatively affecting physical development in dolichosigma (1,2,3, 8,11,12).

**The aim of the reseach.** A comparative study of the morphological signs of efficacy of a new approach to the treatment of sigmoid colon pathology.

### MATERIALS AND METHODS

A total of 143 children hospitalised with dolychosygma of various genesis in the Department of Neonatal and Pediatric Surgery of the Fergana Regional Children's Multiprofile Medical Centre were examined and treated. The age of those examined ranged from 0 months to 18 years, of whom 85 (59.4%) were boys and 58 (40.6%) girls (see Tables 1 and 2).

Table 1

**First group distribution of patients by age and sex**

Sex	Age			Total
	Up to 5 years old	6-10 years	11-17 years	
Boys	22 (32%)	40 (59%)	6 (9%)	68
Girls	17 (38%)	22 (49%)	6 (13%)	45

Table 2

**Distribution of group 2 patients by age and sex**

Sex	Age
-----	-----

	Up to 5 years old	6-10 years	11-17 years	Total
Мальчики	6 (35%)	8 (47%)	3 (18%)	17
Девочки	4 (31%)	7 (54%)	2 (15%)	13

Depending on the treatment, all sick children were divided into two groups, with 113 (79%) children in the main group and 30 (21%) in the control group (Table 3).

Table 3

**Distribution of patients in the first and second groups according to the course of the disease**

Group	Dynamics of illness		
	Age		
	Up to 1 years	Up to 1-3 years	Over 3 years
1 <sup>st</sup> group	14 (12,4%)	33 (29,2%)	66 (58,4%)
2 <sup>nd</sup> group	4 (13%)	10 (33%)	16(54%)

Children in the control group were treated in the traditional way, while those in the main group were treated according to an individual programme using a micro irrigator. Forty-nine (34.2%) children were admitted for the first time with dolichosigmia, and 94 (65.8%) were admitted for a second time, i.e. previously treated children. In the majority of cases, sub- and decompensated stages of the disease were noted.

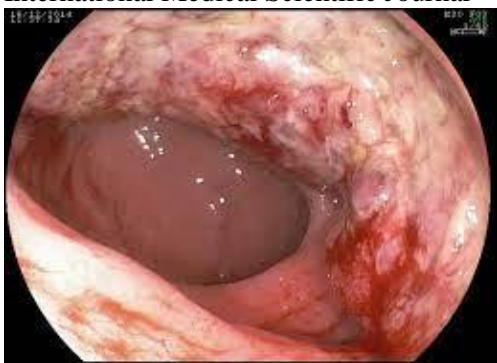
All sick children were treated conservatively. A history of constipation was found. Children were examined to determine the etiopathogenesis of constipation after elimination of pain syndrome. When examining sick children attention was paid to the history, duration, frequency of constipation, nature of defecation, increase in pain syndrome, ineffectiveness of chronic constipation treatment for 1.5-2 years. All children underwent a comprehensive examination in accordance with the standards accepted in the clinic, which consisted of radiological examination of the colon, UTI, MSCT, laboratory methods of examination, endoscopic examination, bacteriological, general histological and histochemical, anthropometric examination and assessment of the quality of life of children.

All patients underwent a comprehensive clinical and biochemical, morphological, histochemical and bacteriological study in a comparative perspective.

**RESULTS AND DISCUSSION**

According to clinical experience of patients with dolichosigma, pathomorphological changes of "S"-shaped intestinal mucosa were revealed in 81 (72%) patients, pallor of skin, in 93 (82,3%) decrease of appetite, in 80 (70,7%) patients. At physical and psycho-emotional exertion the signs of rapid fatigability were noted, and dyspeptic phenomena (belching, 3-4 times liquid in the stomach, abdominal rest, discomfort in epigastric region) in 94 (83%). Secondary encopresis was observed in 51 patients (45%) and showed signs of inability to retain a small mass of stool followed by immediate inability to defecate in these patients. Thirty-six patients (31.8%) had no stool for more than 3 days, and 49 patients (43.3%) had no stool for 3 to 5 days (constipation). In the anamnesis of 51 patients (45%) there were symptoms of tearfulness and moodiness. In 78 patients (69%) there was blunt pain with irradiation into the projection of the colon (mainly into the descending and sigmoid colon), especially increasing before the act of defecation. Patients underwent X-ray examination. On analysis of the findings it was noted that the evacuatory function of the large intestine in this group of sick children was reduced in comparison with healthy children.

Colonoscopic examination of children with the course of the disease up to 1-3 years old revealed pathomorphological changes in the mucosa of the "S"-shaped intestine, i.e. foci of inflammation in the mucosa of the "S"-shaped intestine. The formed bowel and its upper part were covered with white mucus, there were no signs of venous dampness and mucosa folds disappeared, hyperemia in some areas and signs of strangulation (see pic. 1-2).

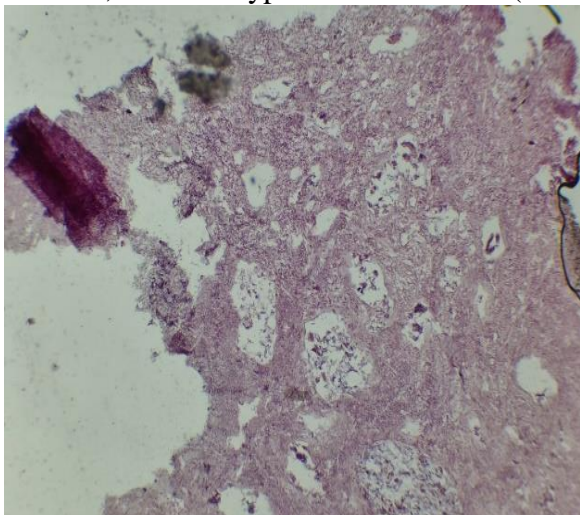


**Picture 1. Mucosa of the sigmoid colon has foci of inflammation and white plaque in the upper part with signs of venous stasis**

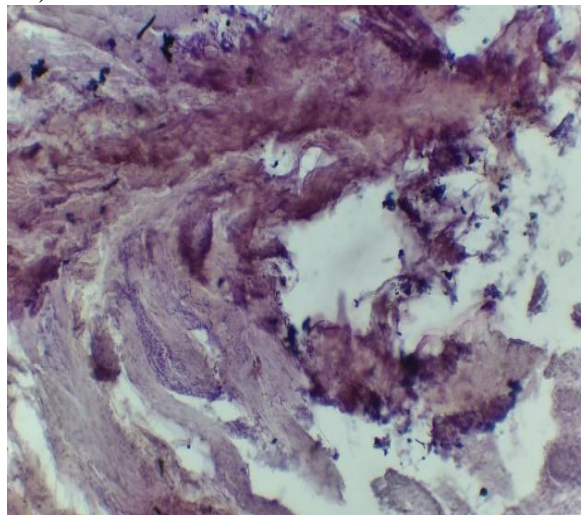


**Picture 2. Wrinkles in the sigmoid colon are gone**

In children with a disease course of more than 3 years, the following pathomorphological and morphostructural changes were observed: the special lamina (basal membrane) of the "S"-shaped mucosa was thinning, the number of columnar epitheliocytes and fascicles in the crypts was reduced, and the crypts were shortened (see Pic. 3-4).



**Picture 3. Focal lymphocytic infiltrates appear in the muscular layer of the colon. H-E. Uv 10x40.**



**Рисунок 4. Destructive changes in the colon mucosa are noted. H-E. Uv 10x40.**

In 6 examined patients the number of epitheliocytes in the mucosa of "S"-shaped intestine in crypts was sharply reduced and not increased, the number of ciliated cells was reduced and their number was sharply reduced, the rough lamina on the apical surface of crypts was lost, alkaline phosphatase staining attenuated, crypts shortened and gaps between them widened, thinning of connective tissue fibres in submucosa, sharp reduction of smooth muscle fibres and appearance of connective fibres among them and deepening of destructive-dystrophic processes (see. Figure 4).

In six examined patients there was a sharp decrease of epitheliocyte number in sigmoid colon mucosa in crypts, reduction of squamous cell number, loss of rough lamina on apical surface of crypts, staining by alkaline phosphatase, reduction of thinning of connective tissue fibers, sharp reduction of smooth muscle fibers and deepening of destructive-dystrophic processes.

Thus, the duration of colostasis course will lead to pathological changes in the mucosa of the large intestine, the latter showing the signs of mucosal and submucosal atrophy which is considered as the third stage of dolichosigmatic decompensation. Colonoscopic examination of children with the course of the disease up to 1-3 years reveals pathomorphological changes in the mucosa of the "S"-shaped intestine, i.e. foci of inflammation and the upper part covered by white mucus, signs of venous dampness and disappearance of mucosal folds. The application of micro irrigator for the

treatment of dysbacteriosis has a favorable local effect, where moderate hyperemia is noted in some areas of the colon mucosa, at the same time, signs of choking and capillary circulation disorders disappear.

#### **CONCLUSIONS:**

1. There is a correlation between morphofunctional changes in the sigmoid wall and clinical and radiological signs in the children examined.

2. The results of endoscopic examination carried out in subcompensated and decompensated children with dolichosigmia comparatively provide informative indications both for the efficacy of conservative treatment and for the choice of treatment tactics.

3. The comparison of the results of traditional and new approaches in dolichosigmia proves the high efficacy of micro-irrigator treatment.

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