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Congenital Stenosis of the Descending Colon in Children (Clinical Case)

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Annotation: Congenital stenosis of the colon and descending colon is a rare form of congenital gastrointestinal defect. The diagnosis and differential diagnosis of this disease are characterized by complexity in pediatric surgery practice.Objective. Improving the diagnosis and treatment of congenital intestinal stenosis in children.Material and Methods. The study population consisted of patients treated for colonic intestinal stenosis between 2018 and 2023.Results. After diagnosing descending colon stenosis, colostomy formation surgery was performed on the patient, considering their general condition. Subsequently, a laparotomy was performed to resect the chrysanthemum stenosis and form a kissing anastomosis. A catamnesis study noted that the condition of the anastomosis and the patient's overall state were satisfactory.Conclusion. Timely diagnosis and treatment of congenital stenosis of the colon require careful attention. In such cases, typical symptoms of this condition include meteorism, vomiting, defecation problems, and slow growth and development in the neonatal period. Pediatric surgeons should carefully investigate the aforementioned symptoms to rule out congenital colon stenosis in children.

Keywords: congenital stenosis of the colon, irrigography, colonoscopy, elimination of stenosis.

Relevance. Descending colonic stenosis is a rare congenital anomaly of the gastrointestinal tract in children. The number of scientific articles on this topic remains insufficient. The diagnosis and differential diagnosis of this condition present significant challenges in pediatric surgical practice.

The clinical manifestations of the disease typically begin in the neonatal period. In many cases, such patients remain under the supervision of pediatricians and gastroenterologists for prolonged periods, often misdiagnosed with conditions such as celiac disease, cystic fibrosis, or intestinal motility disorders, leading to ineffective treatment. Early diagnosis of congenital colonic strictures can help reduce mortality caused by complications such as sepsis, intestinal perforation, and bowel obstruction [6-9].

Studies have shown that the systematic use of contrast-enhanced imaging has led to a twofold increase in the detection of congenital strictures requiring surgical intervention [3,11]. Undoubtedly, the earlier radiographic contrast studies are conducted, the higher the likelihood of an accurate diagnosis [1,5]. Contrast-enhanced irrigography and colonoscopic examinations play a crucial role in the early detection of congenital colonic strictures.

These congenital anomalies of the colon typically necessitate surgical intervention, which is traditionally performed via laparotomy [7,10]. In cases where early diagnosis is achieved but the patient’s general condition does not allow for immediate radical surgery, the initial formation of a colostomy followed by a staged radical procedure is considered the most appropriate approach [2,4].

Research Objective. To improve the diagnostic and treatment methods for congenital colonic stenosis in children.

Research Materials and Methods. The study was conducted on 11 pediatric patients (4 boys and 7 girls) diagnosed with congenital colonic stenosis, who were treated at the surgical department of the Samarkand Regional Multidisciplinary Medical Center between 2018 and 2024. The age of the patients ranged from 2 months to 3 years.

Comprehensive clinical, instrumental, and laboratory examinations were performed, including ultrasonography (US), contrast-enhanced irrigography, electrocardiography (ECG), endoscopy, and echocardiography. Laboratory tests included a complete blood count, biochemical blood analysis, a coprogram, and other relevant investigations.

Clinical Case. On November 29, 2020, a 3-month-old infant, Hasanova S., was admitted to the surgical department of the Samarkand Regional Multidisciplinary Children's Medical Center. According to the mother’s account, the child exhibited symptoms such as vomiting, abdominal distension, absence of bowel movements, and growth retardation. The patient was hospitalized with a preliminary diagnosis of Hirschsprung’s disease.

From the anamnesis, the condition had been present since birth. The mother attributed the illness to an influenza infection and toxicosis during pregnancy. The patient had previously undergone multiple treatments in local hospitals and clinics in Tashkent, where she was diagnosed with celiac disease and intestinal motility disorders.

At the time of hospitalization, the patient’s general condition was severe. The development of subcutaneous fat tissue was poor. The infant's body weight was 3,550 g (birth weight: 3,100 g), with a weight deficit of 1,750 g (33%).

Contrast Irrigography Findings. On November 30, 2020, contrast-enhanced irrigography was performed, during which 30–40 ml of contrast agent was administered. The contrast did not pass into the proximal segment of the descending colon (Figures 1a, 1b).

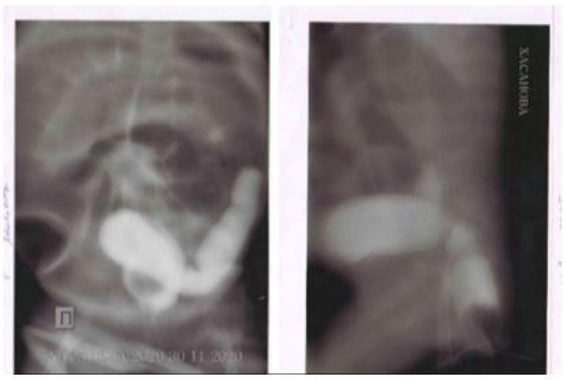

Figure 1-a,b. Contrast irrigography (frontal and lateral projection).

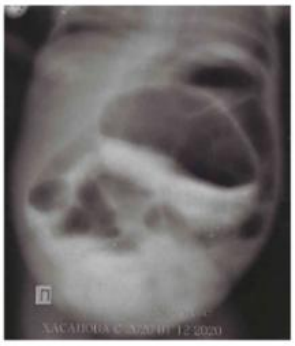

Figure 2. Contrast gastroenterography (after 24 hours).

Subsequently, contrast-enhanced gastroenterography conducted 24 hours later revealed that the contrast remained in the proximal segment of the descending colon, with evident dilation of the transverse colon (Figure 2).

To further clarify the diagnosis, a colonoscopy was performed, which confirmed a narrowing in the proximal segment of the descending colon (Figure 3).

The patient was diagnosed with: "Congenital stenosis of the descending colon. Congenital heart defect. Interventricular septal defect (7 mm). Protein-energy deficiency, grade 3. Anemia, grade 2." Taking into account the severity of the patient's general condition and concomitant diseases, the procedure "Formation of a colostomy from the right iliac region" was performed under general anesthesia.

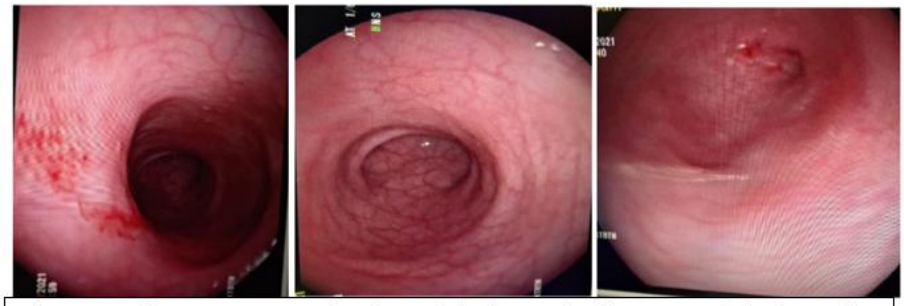

Figure 3. Colonoscopy, Narrowing detected in the proximal segment of the descending

Postoperative Period and Further Treatment. The postoperative period proceeded smoothly. The patient was discharged home for continued colostomy care at their place of residence.

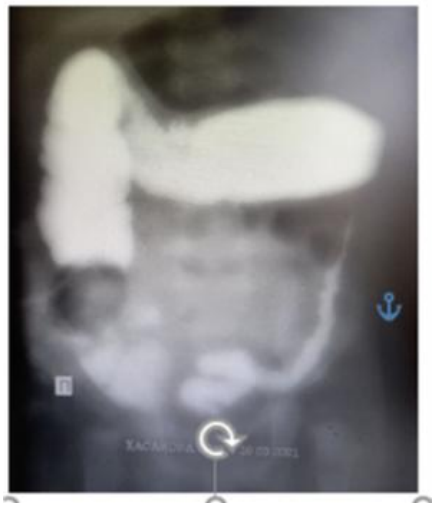

Figure 4. Contrast Study via Colostomy

On April 18, 2021, the patient was readmitted to the center. A contrast-enhanced radiographic examination through the colostomy revealed dilation of the transverse colon and persistent obstruction in the proximal segment of the descending colon (Figure 4).

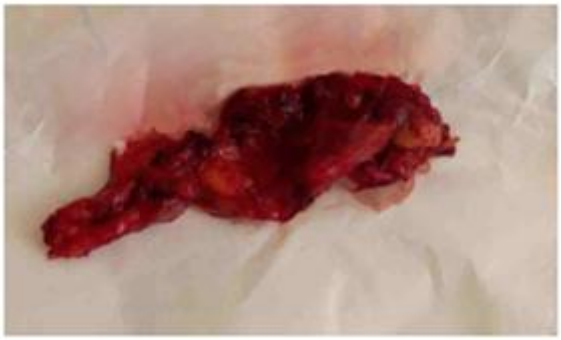

Figure 5. Macroscopic Specimen. Resected stenotic segment of the descending colon.

On April 23, 2021, the patient underwent surgery: Laparotomy. Resection of the descending colonic stenosis. End-to-end descending-descending anastomosis formation. During the procedure, a 5 cm stenotic segment was identified in the proximal descending colon and successfully removed (Figure 5). The colostomy in the right iliac region was left in place. Two months later, a colostomy closure procedure was performed. The postoperative recovery was uneventful. Final Outcome and Follow-Up. The patient was discharged home in satisfactory condition. Two years later, the patient returned for a follow-up examination. At the time of evaluation, the general condition was satisfactory, with no issues related to bowel movements. A contrast-enhanced irrigography performed on June 17, 2023, confirmed that the anastomosis site was intact, with no signs of stenosis (Figure 6).

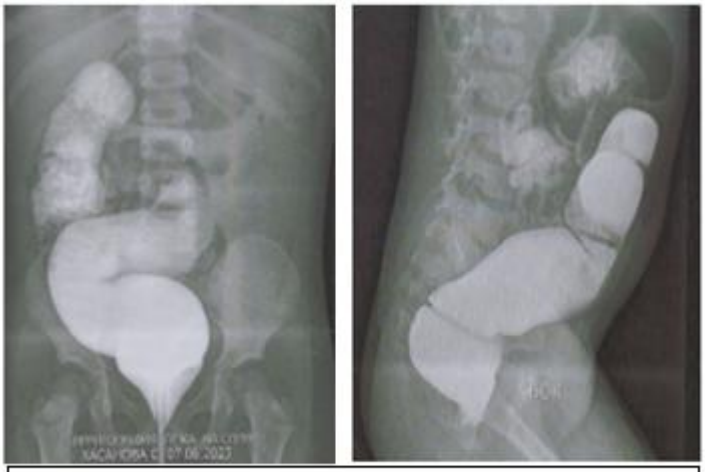

Figure 6. Contrast irrigography (frontal and lateral projection).

Conclusion. Congenital stenosis of the colon is a rare anomaly among gastrointestinal tract developmental defects in children. Its timely diagnosis and treatment require careful attention and thorough evaluation.

The disease presents complex clinical, diagnostic, and differential diagnostic challenges in pediatric surgical practice. Since the condition manifests from the neonatal period, early recognition of characteristic symptoms—such as persistent abdominal distension, enlarged abdominal size, bowel movement difficulties, vomiting, and growth retardation—is crucial. In such cases, an urgent pediatric surgical consultation is essential to rule out congenital colonic anomalies, ensuring timely and appropriate intervention.

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