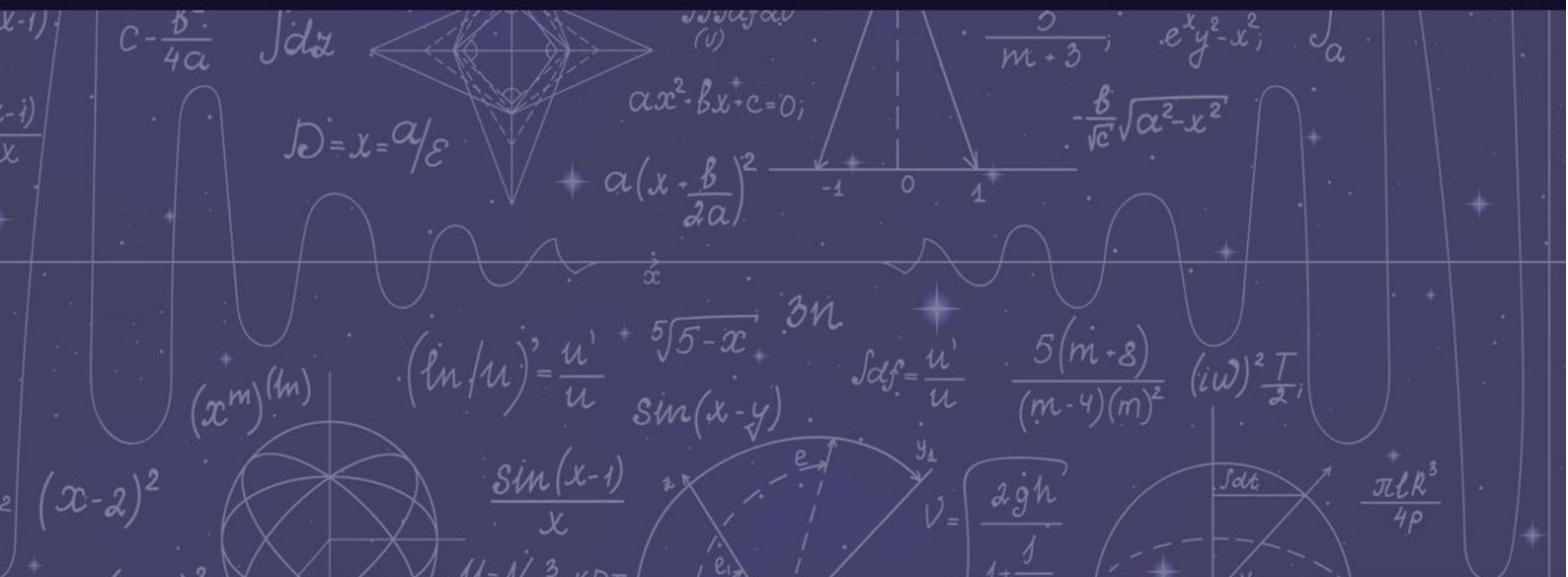


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EFFECTIVENESS OF THE USE OF ENDOVIDEOSURGERY TECHNOLOGIES IN THE TREATMENT AND DIAGNOSIS OF TORSION OF THE GREATER OMENTUM IN CHILDREN

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Abstract. *This article presents the treatment and diagnostic analysis of 12 children with a very rare abdominal hernia. 8 of them had primary sprain, and 4 had secondary sprain. Endovideolaparoscopic resection of appendicitis was performed in 12 children, 1 of them underwent additional appendectomy. Videolaparoscopic resection was performed in 1 patient with greater omentum's cyst. An upper middle laparotomy was performed on a patient with abdominal trauma and conversion was performed. No complications were observed at the site of the operation and in the postoperative period. During the histological examination, signs of gangrenous omentitis were revealed in the greater omentum. Performing operations using endovideolaparoscopic technologies makes it possible to make an accurate diagnosis of the disease, to achieve simultaneous omentum resection and to determine the etiological factors of secondary omentum torsion.*

Keywords: *the greater omentum torsion in children, primary torsion, secondary torsion, surgical treatment, videolaparoscopy.*

Urgency of the problem: Torsion of the greater omentum in children is a rare polyetiological disease in surgical practice, accompanied by clinical symptoms of acute abdominal syndrome. This pathology accounts for 0.01-0.32% of patients undergoing urgent abdominal surgery [1,4,7]. The etiological factors of torsion of the greater omentum found in children and its causes have not been studied clearly yet. Inducing factors for this disease are abdominal adhesion disease, hernias of the anterior abdominal wall, obesity, chronic inflammatory processes in the abdominal cavity, and the producing factors are physical stress, overeating can cause a sudden increase in intra-abdominal pressure or contraction of the muscles of the anterior abdominal wall. [3, 9, 11].

The aim of the study: Since sprain of the large intestine in children is a rare polyetiological disease in surgical practice, our clinical follow-up consisted of a retrospective analysis of children.

Materials and methods of investigation: during 2012-2022, 12 patients were treated with torsion of the greater omentum in children at the Republic Children's Scientific and Practical Center of Minimally Invasive and Endovisual Surgery. It was determined that the age of the patients was from 3 to 18 years. 8 (66.6%) of them were boys and 4 (33.4%) were girls. Based on these analyses, it can be said that boys are more prone to this disease process. "Acute appendicitis?" admitted for examination and treatment with suspicion.

Distribution of patients by age and gender (n-12)

Gender of patients	age of patients					total
	3-5	5-9	9-12	12-15	15-18	
Boys	1	1	2	3	1	8
	8,3%	8,4%	16,6%	25%	8,4%	66,7%
Girls		1	2	-	1	4
		8,4%	16,6%		8,3%	33,3%
total	1	2	4	3	2	12
	8,3%	16,8%	33,2%	25%	16,7%	100

There were 11 children who were urgently referred to the hospital with suspicion of acute appendicitis, and these patients were referred to the hospital between 5 and 72 hours after the onset of the disease and the manifestation of the clinical picture. In most patients, the exact etiological factors causing abdominal pain were not identified when the anamnesis was collected. Only one boy was punched in the abdomen while doing boxing 2 hours before hospitalization. This patient presented with recurrent abdominal pain. Abdominal cyst was detected in 1 patient who presented with abdominal pain, i.e., abdominal cyst was performed during UTT of abdominal organs. All the children who came to the emergency room had different intensity of the clinical picture of abdominal pain, and more pain was observed in the right half of the abdomen and in the epigastric region.

In most cases, pain in the abdomen has a constant character, and sometimes it has an episodic character. In 2 of the patients who applied, it was observed that the signs of exposure to the peritoneum were positive in the right flank area. In addition, pain syndromes were observed in 3 patients, and dyspeptic disorders, i.e. vomiting, nausea, diarrhea were found in them. Body temperature in all patients remained subfebrile $t-37.4^{\circ}\text{C}$ or normal.

The average amount of peripheral leukocytes in the blood ranged from 6.9 to $17.3 \cdot 10^9/l$. Only one patient presented urgently with abdominal pain, and it was found that an infiltrate with a non-structured in the lower abdomen was detected in the abdominal UTT examination. Abdominal UTT examination did not reveal echosonographic pathological changes in all other patients. Urgent operations were performed on 12 children. If the patient has constant pain in the abdomen, signs of exposure to the peritoneum appear during the observation process, and the amount of free fluid in the abdominal cavity is determined during the UTT examination, and signs of infiltration are observed, it is an indication for a diagnostic endovideolaparoscopic procedure. A planned diagnostic endovideolaparoscopic procedure was performed in order to clarify the diagnosis of an abdominal cyst in one patient.

Research results: For endovideolaparoscopic operations, using an 8 mm optical trocar, a trocar was placed in the supraumbilical region, and 5 mm trocars were placed in the suprapubic and left flank region. During endovideolaparoscopic surgery, in many cases, a small amount of serous-hemorrhagic fluid was detected in the pelvic cavity. 720 degree rotation of the large intestine was detected in 10 patients during videoendolaparoscopic surgery. It was observed in a child who received a blow to the abdomen with a 360 degree rotation of the large intestine and a hematoma of the round ligament of the liver. 1 patient with a thin-walled cyst with a diameter of up to 7 cm had a 180 degree twisting of the large intestine. Acute phlegmonous appendicitis combined with 360 degree twisting of the large intestine was found in 1 patient. The parts of twisted omentum are identified in the lower areas of the abdominal cavity or in the right side area,

the longitudinal dimensions are from 3 cm to 7 cm, they are dark red or black, and the necrotic omentum is distinguished from healthy omentum by a clear border.

Monopolar coagulation or Reder's suture was used in the endovideolaparoscopic resection of large intestine torsion in 12 children, and in 1 of them, appendectomy was additionally performed at the site of operation. The greater omentum cyst was resected by videoendolaparoscopic method in 1 patient. It was possible to remove the resected drug from the abdominal cavity by installing a large-sized trocar instead of a 5-mm trocar in the umbilical region. The patient who presented only with abdominal trauma was converted due to total infiltration of the large intestine, and the surgical operation was performed by upper middle laparotomy. There were no complications in the intraoperative and post-operative periods. Inpatient treatment lasted from 5 to 15 days, the average bed rest was 7 days. The results of histological examination revealed signs of gangrenous omentitis due to impaired blood circulation in many cases. The first information about the torsion of the greater omentum was written by Oberst in 1882. The torsion of the greater omentum is divided into primary and secondary types. Primary omentum's torsion is more common in boys. Primary omentum's torsion is more common among children aged 11-15 years. It was found in cases of secondary omentum torsion, omentum cyst, omentum tumor and omentum hematoma. One of the main causes of scoliosis in children is its anatomical structure. One of the other factors is obesity in children. The diagnosis of omentum's sprain is very complex, and in many cases, the diagnosis is made at the site of the operation. When diagnosing a hernia in children, it is necessary to carry out a comparative diagnosis with acute appendicitis and pathological diseases of the small pelvis in girls. Sometimes the pain is observed when eating more than normal, when the pressure in the abdominal cavity increases. Clinical symptoms appear gradually, signs of long-term intoxication are not detected. On palpation of the abdomen, there is light pain in the right half of the abdomen, and in most cases, patients apply 2-4 days after the onset of the disease. On palpation of the abdomen, there is pain in the right half of the abdomen. Muscle tension is not observed. Body temperature in patients is normal or subfebrile. There are no changes in general blood tests at the beginning of the disease, leukocytosis is observed when omentum necrosis and peritonitis develop. During the UTT examination of the abdominal cavity, it is sometimes possible to determine that the fat tissue has increased blood circulation, swelling, and increased hyperechogenicity. In such cases, the videolaparoscopy method plays an important role in identifying acute pathological processes in the abdominal cavity. In the literature, due to the insufficient conservative treatment of herniated disc in patients, the development of abscesses in the abdominal cavity leads to the appearance of peritoneal adhesions. Endovideolaparoscopy technologies are one of the effective methods of diagnosis and treatment of torsion in children.

Conclusions:

1. Torsion of the greater omentum in children occurs in rare cases, and its clinical symptoms are often similar to clinical symptoms of acute appendicitis.
2. Due to the lack of specific symptoms of hernia in children, UTT examination gives very little information, it is appropriate to use endoscopic laparoscopy in the diagnosis of hernia.
3. In recent years, intensive use of endoscopic laparoscopy in clinical practice makes it possible to timely diagnose torsion of the greater omentum in children.
4. Endoscopic laparoscopy is not only used for the diagnosis of torsion of the greater omentum in children, but it is considered one of the high-tech, low-injury surgical procedures for performing resection of the destructively changed intestine and eliminating etiological factors.

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