Materials and methods: author conducted examinations in 71 children with hemorrhoids: general clinical, laboratory, rectal finger, anoscopy, rectoscopy and additional research complexes. There were 56 (78.8%) boys and 15 (21.2%) girls.

Results and discussion: The features of the cause of the disease, clinical manifestations, course, localization have been studied and tactical treatment approaches in the age aspect have been developed. In infants, a common cause of hemorrhoids were: a two-stage act of defecation with increased diarrheal syndrome; in children of early and preschool age, periodic and prolonged potty sitting and congenital inferiority of the venous network of the small pelvis in school-age children played an important role. The frequency of occurrence is more marked in preschool age – 71.7%. The external form of hemorrhoids was revealed – in 90% and combined – in 10% of sick children. Frequent localization of hemorrhoids occurred in children at 4 o’clock (35%) and 7 o’clock (30%).

Comprehensive treatment of hemorrhoids in children was carried out: conservative - in 34 (83%) and surgical - in 7 (17%) patients. In infancy and early age, the complex of conservative treatment included: treatment of the main disease (ChD, diarrheal syndrome, pathology of the colon, etc.) and local treatment; in preschool children - the use of medical enemas and rectal suppositories, ointments and the use of SCL, LL and school and older age - treatment of ChD. Indications for the operation were: the presence of large varicose nodes that violate the act of defecation, inflammation, prolapse, infringement and constantly falling out nodes and causing pain. In children, more gentle surgical methods are used. Surgical treatment is more susceptible to school age. There were no complications in the postoperative period.

Conclusions. 1. Persistent constipation is a common cause of hemorrhoids in children; increased diarrhea, a two-stage act of defecation, tension in sports, tense cough and urination are also causes of hemorrhoids.

2. The clinical features of the course of hemorrhoids in children 1-3 years old is the transient nature of the course in 70% of cases.

3. Hemorrhoids are often found in children of preschool age, with the absence of pain and bleeding.

4. The most frequent (65%) localization is 4 and 7 on the clock face.

5. In children under 3 years of age with hemorrhoids, only conservative treatment is an effective method. Surgical treatment is more susceptible to school age.

6. Indications for hemorrhoid surgery in children are: the presence of large varicose nodes that violate the act of defecation, inflammation, prolapse, infringement, as well as easily or constantly falling out nodes and causing pain.

Key words: hemorrhoids, children, conservative treatment, surgical treatment.

Actuality
Hemorrhoids are a polyetiologic proctologic disease. There are numerous (more than 8) theories of the origin of hemorrhoids in adults and among them in childhood, the most typical is congenital insufficiency of the venous system of the anorectal zone and pelvic veins in children, which often leads to an increase in venous pressure in the system of hemorrhoidal veins [1, 2, 3].

In the last 30 years, significant progress has been made in the study of the pathogenesis of hemorrhoids. There are data confirming the absence of a link between hemorrhoids and portal hypertension [4, 5]. The presence of cavernous vascular tissue (corpus cavernum sum recti) rich in arteriovenous anastomoses in the submucosa of the anal canal has been proven, which explains the fact of the release of bright red blood in patients with hemorrhoids [6, 7]. Wald A. et al. showed that vascular tissue, which he called "vascular pillows" (vascular cushions), is concentrated at the level of 4, 7 and 11 o’clock in the channel level with or above the anal dampers. He considers the Morgagni columns to be a consequence of longitudinal cracking in the "anal pads", which are located in the submucosa, and include dilated venous vessels, smooth muscles and connective tissue. Thus, there is a hypothesis that hemorrhoids occur due to rupture of connective tissue and smooth muscles supporting these pillows, which leads to their loss into the lumen of the distal part of the anal canal [8, 9, 15].

Other authors believe that hypertrophy of the sphincter muscles is associated with an increase in its workload and a more pronounced anal reflex in the lumen of the anal canal. Its increased function may contribute to an increase in intra anal pressure and an increase in hemorrhoids (GU). Thus, the function of the external and internal sphincters of the anal canal plays an important role in the pathogenesis of hemorrhoids and in determination of disease study [10, 11, 12].

Therefore, taking into account the rarity of hemorrhoids, the peculiarities of the clinical course and complex treatment in children, requires further study [10, 13, 14, 16, 17].

Objective: To improve the results of complex treatment of hemorrhoids in children by studying the
features of clinical treatment, indications and the choice of surgical methods.

Materials and methods: In the clinical base of the hospital of pediatric surgery TashPMI (1-city child clinical hospital) over the past 11 years, 71 sick children with hemorrhoids were treated inpatient and outpatient: aged up to 1 year – 3 (4.2%); 1-3 years – 21 (29.5%); 3-6 years – 30 (42.2%); 7-12 years – 11 (15.5%); 13-18 years – 6 (8.4%). The external form was revealed in 64 (90%); the combined form in 7 (10%). There were 56 boys (78.8%), 15 girls (21.2%). Localization of hemorrhoidal pillows (fusion of nodes) and the nodes were determined in the patient by the hourly cerebral in the supine position. All patients underwent examinations: general clinical, laboratory, physical exercises by squatting, rectal finger examinations, anoscopy and rectoscopy. Additionally, ultrasound with doppler, propositional irrigography, and rectoromanoscopy were performed to study the primary causes of hemorrhoids in children [18, 19, 21].

Results and discussion

As a result of the analysis of catamnestic data (extracts of medical histories, the study of the results of clinical and anamnestic data) and a comprehensive clinical examination in 71 sick children with hemorrhoids, the features of the cause of the disease, clinical manifestations, course, localization, tactical approaches of complex treatment in the age aspect were studied.

At the same time, the cause of hemorrhoids in children were: persistent constipation – in 39.1% of patients; increased diarrhea with frequent urges – in 21.7%; two-stage act of defecation (prolonged sitting and straining) - in 13%; tension in sports - in 21.7%; stone or narrowing of the urethra (strained urination) – in 6.5%, etc.

In patients with hemorrhoids with a history of persistent constipation (39.1%), the causes of dolichosigma and megarectum were established during irrigography, the development of which was caused by long potty-sitting and straining. In patients with diarrhea, rectoromanoscopy revealed a picture of chronic proctitis, proctosigmoiditis and intestinal dysbiosis.

We found that in infants, the development of hemorrhoids was facilitated by a two-stage act of defecation with increased diarrheal syndrome (against the background of acute enteric infection), which led to frequent straining, increased intra-abdominal pressure and relaxation of the external sphincter (anus gaping).

In children of early and preschool age, frequent causes were: periodic and prolonged potty sitting, and congenital inferiority of the venous network of the pelvis, often led to the development of hemorrhoids.

In patients at preschool and school age, the cause of hemorrhoids played an important role of ChD. In them, during irrigography, dolichosigma and megarectum were detected.

The high frequency of occurrence was noted in preschool and in 15 (21.1%) at school age. In the anamnesis of 18 (25.3%) sick children, the presence of hemorrhoids in close parents was noted.

In the initial diagnosis, the hemorrhoids were more often localized at 3, 7 and 11 o'clock of the conventional dial. The dimensions of the hemorrhoids ranged from 0.5 cm to 2.5 cm in diameter. The protrusion of HN was noted in the form of external 1,2,3 nodes – in 41 (57.7%) and pillows (fusion of nodes) – in 30 (42.3%) patients.

The number of HN: with one – in 39 (55%) patients; with two – in 15 (21%); with three – in 17 (24%). Localization of 30 pillows was: left side (at 2-5 hours) – in 12 (40%); right back (at 6-9 hours) – in 11 (36.6%) and right front (at 10-12 hours) - 7 (23.4%).

The age distribution of hemorrhoids in children had their own characteristics: in infancy (3 months-1 year) – 4 (10%); in early (1-3 years) – 6 (14%); in preschool (4-6 years) – 13 (32%); in school (7-12 years) – 14 (34%) and in adolescence (13-17 years) – 4 (10%). At the same time, a high frequency of occurrence was noted in preschool and school age – 27 (72%).

Frequent localization of hemorrhoids occurred in children at 4 o'clock – in 14 (35%) and 7 o'clock – in 12 (30%), which is proof of the congenital genesis of the disease.

Each patient with hemorrhoids revealed from the 1st to the 3rd HN: with one node - in 26 (63.2%) patients; with two - in 11 (26.8%); with three – in 4 (10%). The usual nodular prolapse was noted in 34 (83%) patients; thrombosis of hemorrhoids – in 6 (14.6%), bleeding was noted in 1 (2.4%) case. The dimensions of the HN were: 0.4 - 1.2 cm in diameter.

These age-related features of the cause, clinical manifestation, course and localization of hemorrhoids in children, largely formed the basis of the tactical and technical aspects of surgical treatment.

HN after the act of defecation had a transient character - in 35 (70%) and permanent - in 15 (30%) patients. Among the latter, 9 (12.6%) patients had thrombosis of HN.

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HN in preschool children clinically proceeded in a more atypical form with the absence of pain and bleeding. They often noted the anxiety of the child against the background of a feeling of discomfort in the anus after the act of defecation. In school-age
children, itching and pain in the anus have joined this, which are explained by the addition of the inflammatory process. With thrombophlebitis, older children had a difficult and painful act of defecation with minimal bleeding.

The clinical manifestation of hemorrhoids in young children occurred in a more atypical form and of a transient nature, where they were cured after the act of defecation, then after a while spontaneous reduction in size or its disappearance [25]. When the protrusions of the HN were constantly maintained, they were diagnosed as "hemorrhoids without hemorrhoids". They had two variants of the clinical course: the first – when internal and external HN are present, but there are no complaints; the second - with careful examination, although it is not possible to detect a sharp expansion of hemorrhoids, there is discomfort and pain in the area of varicose veins.

HN in young children began gradually, imperceptibly and for a long time there was a feeling of discomfort in the anus in patients. Itching of the anus was added to this symptom in school-age children. Pains in school-age and older children appear later than other symptoms. Pain often appears in older children, only after the addition of inflammatory phenomena, infringement of hemorrhoids or when the integrity of the integumentary epithelium of the anal ring area (cracks or ulcers) is disrupted. In children, bleeding was not the first symptom of hemorrhoids.

In almost all children with hemorrhoids, the course proceeded with periods of exacerbation, without inflammation or with moderate inflammation of the hemorrhoids. With mild exacerbations, moderate swelling of the HN was observed without inflammatory phenomena. These forms of hemorrhoids occurred in adolescence in 5 cases. A moderately severe degree of exacerbation consists in swelling, enlargement and inflammation of both visible external and internal hemorrhoids. The skin covering the outer skin is stretched, tense, inflamed. Each hemorrhoidal node bulged outwards, obscured the lumen of the anus and deformed the anal canal. On palpation, inflamed nodes are painful, dense. At the same time, the finger was hardly inserted into the anal opening. The tissues surrounding the inflamed hemorrhoids were usually not inflamed. Defecation was difficult and painful, body temperature did not rise and hemorrhoidal bleeding was absent.

Treatment of hemorrhoids in children: we performed conservatively in 59 (83%) and surgically in 12 (17%) patients. Conservative ones include: diet therapy; mechanical cleansing of the intestine with an enema; medication and physiotherapy. Tactically, given the small age of children (from 3 months to up to 3 years) and the absence of emergency clinical manifestations (rectal bleeding), there were no indications for emergency surgical treatment.

Therefore, the complex of conservative treatment of hemorrhoids was reduced to treat the underlying disease (diarrheal syndrome) and local treatment (cleansing and therapeutic enemas with chamomile solution, rectal hemorrhoidal suppositories were inserted 2 times – in the morning and in the evening – for 7 days). A course of moderate dilation of the anus was carried out for 2-3 days with a pediatric rectoscope. In the presence of edema in the nodes, an SCL laser (LL) was prescribed for 3-5 days. At the same time, conducting 1-2 courses of local therapy gave a positive effect in all cases, without surgery.

Tactically, the features of the treatment of hemorrhoids in preschool children were the use of medical enemas with chamomile solution, the use of rectal suppositories (antihemoran) and ointments (proctosan) and the use of PPL or SDL on the hemorrhoidal node area. At the same time, blood circulation was restored, stagnation in the pelvic organs decreased, intestinal peristalsis increased, the muscles of the pelvic diaphragm strengthened, which led to the disappearance of HN.

In school-age and older children in the treatment of acute hemorrhoids in the complex treatment of hemorrhoids, attention was focused on the prevention and treatment of HC. Vegetables, fruits black bread and other foods containing a sufficient amount of toxins were recommended for the diet. Enemas were considered an active method as prevention of complications and treatment of hemorrhoids. Painkillers, anti-inflammatory and astringents were aimed at eliminating individual symptoms of hemorrhoids. Rectal suppositories (antihemoran, relief) and ointments (proctosan) were applied topically.

When evaluating generally conservative methods of treating hemorrhoids in children using a rational combination of dietary, medicinal, physiotherapeutic and other factors, it is possible in most sick adolescents to achieve the transfer of the acute stage of the disease into a chronic one and get a long-term remission in 15% of cases, or a complete cure - up to 85%.

Surgical treatment of hemorrhoids in children we have produced only in 6 cases in hospital conditions. Of those operated on in 2 cases, an urgent hemorrhoidectomy was performed for thrombosis of HN. Indications for surgery depended on the nature of the existing pathological changes. Absolute indications for the operation were: the presence of large varicose nodes that violate the act of defecation, are often complicated by inflammation, prolapse, infringement; easily or constantly falling out nodes that cause pain. The relative indications were: moderately pronounced HN with rare exacerbations of the disease of single, multiple and stressed external HN, not amenable to conservative treatment. During operations for hemorrhoids in children, general anesthesia was preferably used [20, 22, 23, 24].

Among the numerous proposed methods and modifications of surgical treatment of hemorrhoids, in childhood we used more gentle methods. At the same time, an important point in choosing the method was the assessment of the state of the base of the leg of a single or multiple HN. If the base of the leg is narrow, the higher part of the HN was seized with a clamp, pulled up and circularly excised at the level of the narrow base of the node. I ligate the HN at the base, immersed the stump in the wound and suture the wounds longitudinally with continuous sutures of the 5/0 Vikril thread. We performed a similar operation in 2 patients. There were no relapses during the follow-up period for 2 years.

If the base of the hemorrhoidal node is wide, a circular excision of the mucous membrane along with dilated veins on the wide base of the leg pulled
over the top of the node. At the middle part of the legs the stitches were tied with a 5/0 Vikril thread and the knot was cut off above the ligature. The resulting wound was sutured with continuous sutures with the same thread transversely with the immision of the stump.

Thus, the defect of the wound of the skin-mucosal junction was restored. To prevent pain, 2% novocaine solution 2–4 ml was injected intraoperatively at the base of the wound. After the operation, a Foley catheter of the appropriate size (No. 24–30) was inserted into the anus and around it, a turunda soaked in Bakstims balm was inserted, which was protected from infection of the operating wounds. At the same time, gases and intestinal contents were released freely. We performed a similar operation in 4 school-age patients. Relapses of hemorrhoids in the long-term period were not noted.

In the postoperative period, patients are prescribed any painkillers 1–2 times in the first 3 days. The gas outlet tube was removed after 6–7 days., with the help of a cleansing enema with chamomile solution, good intestinal emptying was ensured.

Conclusions:
1. Persistent constipation is a common cause of hemorrhoids in children; increased diarrhea, a two-stage act of defecation, tension in sports, tense cough and urination.
2. The clinical features of the course of hemorrhoids in children 1–3 years old is the transient nature of the course in 70% of cases.
3. Hemorrhoids are often found in children of preschool age, with the absence of pain and bleeding.
4. The most frequent (65%) localization is 4 and 7 on the clock face.
5. In children under 3 years of age with hemorrhoids, only conservative treatment is an effective method. Surgical treatment is more susceptible to school age.
6. Indications for hemorrhoid surgery in children are: the presence of large varicose nodes that violate the act of defecation, inflammation, prolapse, infringement, as well as easily or constantly falling out nodes and causing pain.

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References:
Резюме
Мета: аналіз поточної ситуації в проблемі геморою у дітей різного віку на основі власного досвіду.
Матеріали і методи: автор провів обстеження 71 дитини з геморою: загальне клінічне та лабораторне обстеження, пальцеве обстеження прямої кишки, аноскопію, ректоскопію та додаткові методи обстеження. Серед них 56 (78,8%) хлопчиків та 15 (21,2%) дівчат.
Результати і обговорення. Вивчені основні причини захворювання, клінічні прояви та перебіг, локалізація геморoidalних вузлів та розроблені тактичні підходи до лікування пацієнтів різного віку з гемороєм. У дітей грудного віку частою причиною геморою є двомоментний акт дефекації при діарейному синдромі; у дітей раннього і дошкільного віку – тривале сидіння на горщикі; врожденна неповна пробка, у дітей дошкільного віку важливу роль у виникнені геморою грають хронічні захворювання прямої та товстої кишки. Найчастіше геморої має у дітей дошкільного віку – 71,7% випадків. Зовнішня форма геморою виявлена у 90%, комбінована у 10% пацієнтів. Консервативне лікування проведено у 59 (83%) хворих, хірургічне – у 12 (17%) дітей.
У грудному і ранньому віці у комплекс консервативного лікування входили: лікування основного первинного захворювання (хронічного захворювання прямої чи товстої кишки, діарейного синдрому тощо) та місцеве лікування. У дітей шкільного віку застосували лікувальні лікії та ректальні свічки, мазі та фізичні методи лікування.
Показами до операції були: навіяння великих варикозних вузлів, що порушують акт дефекації, запальне захворювання прямої кишки, випадіння та запечення вузлів, що викликало больовий синдром. У дітей застосовували щадні хірургічні методики. У складних випадках не було.
Висновки. 1. Хронічні закрепи є основною причиною геморою у дітей; виражена діарея, двомоментний акт дефекації, спортне навантаження, напружені кашель та утруднене сечопускання також є причинами геморою у дітей. 2. Клінічними особливостями перебігу геморою у дітей віком 1-3 роки є транзиторний характер у 70% випадків. 3. Геморой найчастіше зустрічається у дітей дошкільного віку з відсутністю болю та кровотечі. 4. Найчастіше (65% випадків) геморoidalні вузли локалізуються на 4 та 7 годинах по часовій хронометрії. 5. У дітей до 3 років з гемороєм застосовується лише консервативне лікування, яке ефективно виконується у дітей шкільного віку.
6. Показаннями до хірургічного лікування геморою є: наявність великих варикозних вузлів та больовий синдром при їх запаленні, випадінні, запечення тощо.
Ключові слова: геморой; діти; консервативне лікування; хірургічне лікування.

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