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TREATMENT TACTICS FOR ANORECTAL ANOMALIES IN GIRLS

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Abstract
This study describes the surgical treatment of 114 girls born with anorectal anomalies , taking into account the anatomical form of the anomaly , its development, and concomitant anomalies. The advantages of a single-stage surgical treatment and indications for a multi-stage surgical treatment with colostomy are based on the results.

Keywords : Anorectal defects, girls, method of treatment.

Introduction

Relevance

Despite its centuries-old history, diagnosis and surgical treatment of children with anorectal anomalies (ARA) remain one of the pressing issues in pediatric surgery. The issue of the choice of tactics and timing of the radical stage of the surgery currently causes fundamental disagreement among researchers. With ARA, the tactics of the upcoming surgical treatment must be determined within the first 24 hours of the child's life. Proponents of a single-stage radical operation propose performing it starting from the neonatal period (Bairov G.A., 1997; Nemilova T.K., 1998; Ashcraft K.W., Holder T.M., 1997). Proponents of multi-stage operations consider it appropriate to create a preventive colostomy with a delay in the subsequent radical stage (Orlovsky V.V., 2006; Ivanov V.V. et al., 2007).

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However, with regard to the method of surgery, the opinion of most researchers is unanimous: low forms of anorectal malformation should be corrected through perineal access, and in cases of intermediate and high forms, the use of posterior sagittal anorectoplasty or abdominoperineal proctoplasty is recommended. As a rule, different clinics are committed to their own schools and perform a wide variety of operations: Stone ; Dieffenbach ; Rizzoli ; Pena (Lenyushkin A.I., Petrovsky M.F., 2001; Shchitinin V.E. et al., 2001; Ionov A.L. et al., 2007; Pena A ., de Vries P. , 1982 ;). Often, with anorectal anomalies, there are cases of late diagnosis with the development of various complications that aggravate their course, requiring a radical change in treatment tactics, and sometimes the type of surgical intervention. Despite the development and implementation of new surgical methods and real successes in the treatment of anorectal anomalies, according to various authors, unsatisfactory results account for 10-50% of cases (Semilov E.A. et al., 2003; Parshchikov V.V., Krol E.S., 2006; Tarakanov V.A. et al., 2009; Iwai N , et all . 2007; Grano C, et all . 2009; Kuroda T. et all . 2009). This confirms that the problem of surgical correction of anorectal anomalies remains relevant; a thorough study and analysis of the causes of unsatisfactory results of primary interventions and improvement of a differentiated approach to the choice of tactics and optimal methods of their correction are necessary.

The aim of the work: to determine the choice of optimal tactics, timing and method of surgical treatment depending on the nature of anorectal anomalies in girls.

Materials and methods. From 2004 to 2011 г. 114 girls with anorectal malformations were treated at the clinical sites of the Department of Pediatric Hospital Surgery of TashPMI. The age of the patients ranged from 1 day to 14 years: newborns - 9 (7.9%), 1-3 months - 22 (19.3%), 4-6 months - 22 (19.3%), 7-12 months - 28 (24.6%), 1- 3 г.- 18 (15.8%), 4-6 years - 7 (6.1%), 7-14 years -

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8 (7.0%). Of these, 94 (82.5%) were newly admitted, 20 (17.5%) - recurrently due to complications after the primary surgical correction. In determining the anatomical form of anorectal malformation, we adhered to the International Classification adopted in Krickenbeck - Germany (Alexander Holschneider , John Hutson , Albert Pe ñ a , et all . 2005). There were 10 patients (8.8%) with perineal fistula; 66 (57.8%) with rectovestibular fistula; 12 (10.5%) with cloacal form; non-fistula form: high was diagnosed in 2 (1.8%), low - in 4 (3.5%); rare variants: rectovaginal fistula - in 10 (8.8%), rectovestibular fistula with normally formed anus - (H - form) was established in 10 (8.8%) patients.

To clarify the anatomical form of anorectal malformation and identify concomitant malformations of other organs and systems, the patients underwent ultrasound, X-ray, and CT examinations.

Results and their discussion

Analyzing the obtained data, it can be noted that fistula forms predominate in ARA - 86 (75.4%). Of these, the majority are rectovestibular fistulas - 66 (57.8%). An important criterion determining the treatment tactics for ARA is the diameter of the fistula tract, which depends on the degree of bowel emptying. Of the 86 girls with fistula forms of malformation, 63 initially admitted had fistula tract sizes of different sizes. In 24 (21%), the fistula tract diameter corresponded to the size of Hegar bougies No. 2-3. In such cases, patients developed partial low intestinal obstruction, requiring fistula bougienage. In 34 (29.8%) In patients, the fistula tract size corresponded to Hegar bougies No. 4-6. In these patients, difficulties with defecation began at 2-3 months of age and worsened with the addition of complementary foods. In 5 (4.4%) In patients, the fistula tract was easily passed through a Hegar bougie No. 7-10. These patients usually did not experience prolonged difficulty with defecation.

During the examination, concomitant malformations were detected in 30 patients (26.3%). Multiple malformations were found in 11 (9.6%); malformations of the

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kidneys and urinary tract were diagnosed in 12 (10.5%); renal agnesia - in 5; ureterohydronephrosis - in 5, including 3 with vesicoureteral reflux; hydronephrosis - in 1; multicystic kidney disease in -1; compensated heart defects - in 11 (9.6%) patients: patent foramen ovale - in 7, of which in 3 it was combined with patent ductus arteriosus and ventricular septal defect; ventricular septal defect - in 4. Malformations of the sacrum and coccyx were observed in 4 patients, in 2 cases in combination with ureterohydronephrosis. Musculoskeletal disorders: hemivertebrae were observed in 3 patients (2.6%), including 1 case of esophageal atresia and 1 case of upper limb malformation and right kidney agnesia. Associated gastrointestinal malformations were detected in 1 patient (0.8%). Spinal cord malformations were observed in isolated cases, including spinal hernia, anterior abdominal wall hernia, and cleft lip with convergent strabismus.

The presented data demonstrate that patients with anorectal malformations should be thoroughly examined to identify associated anomalies. Analysis of the identified associated anomalies revealed that many do not require significant changes in treatment strategy in terms of timing and staging of surgery and are not a contraindication for early correction of ARA. Surgical treatment of most associated malformations is possible on a planned basis at a later date.

In our observations, the surgical tactics and the method of surgical intervention were determined depending on the anatomical form of the defect, its individual characteristics due to the localization and size of the fistula tract. One-stage radical interventions without colostomy were performed in 93 (81.5%) patients: in the neonatal period - in 4 (3.5%), at the age of up to 1 year - 61 (53.5%), up to 3 years - 14 (12.3%), over 3 years - 14 (12.3%). A colostomy was imposed for a staged correction of the defect in 21 (18.4%) patients, including 3 after an unsuccessful radical operation in other hospitals. 19 (16.6%) patients were discharged from the hospital with a recommendation for a planned radical operation with stoma closure. In 2 patients, radical surgery was performed

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simultaneously with stoma closure. Ten patients underwent subsequent colostomy closure after radical surgery, and seven with existing colostomies are being monitored for the next stage of treatment. Two (1.7%) children died in the early postoperative period due to complications related to multiple malformations.

Indications for colostomy were: persistent cloaca in 10 patients, rectovaginal fistula in 8. In 2 patients (1.8%), the high non-fistulous form of anorectal atresia was combined with esophageal atresia in one and congenital heart disease in the other; in 1 patient - with the H-form due to fistula recurrence.

When evaluating the results of surgical correction of anorectal anomalies performed on an emergency basis in newborns and children under 3 months of age, it was found that the development of postoperative complications was associated with an inadequate choice of treatment tactics, excessive haste in determining the urgency of the operation, or gross technical errors in performing the surgical intervention.

When determining treatment strategies, we believe it is appropriate to consider the nature of the anorectal anomaly, the child's medical history, and maturity. We prefer a single-stage surgical approach, adhering to the principle of maximally radical intervention, but delayed. In our opinion, performing the main stage of corrective surgery in the neonatal period or early infancy has undeniable advantages. Long-term anorectal defects lead to the development of secondary megarectum and megacolon, urogenital infection, and intestinal dysbiosis.

Absolute indications for a colostomy include persistent cloaca, rectovaginal fistula, and associated malformations requiring early surgical correction. In other cases, immediate radical surgical correction is appropriate. The choice of colostomy level and method should also not be a definitive decision. For ARA, we prefer to perform a single-barrel sigmastomy via a minilaparotomy approach with obstruction of the distal colon. This completely prevents fecal contamination of the efferent loop of the colon, creates functional rest, and maintains blood flow

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to the rectum. This method is minimally invasive, easy to perform, and allows for hydraulic training enemas to strengthen anorectal sphincter function by increasing intrarectal pressure and gradually increasing it after stoma placement until it is eliminated during subsequent stages of the surgery.

Step-by-step treatment of children with anorectal pathology requires significant involvement from their parents, who care for the stoma to preserve the function of the distal colon. They must also strictly follow all recommendations for exercise therapy and physiotherapy to improve the function of the newly formed rectal sphincter.

Radical intervention in the form of perineal proctoplasty according to Stone-Benson was performed in 40 patients (35.1%), via anterior sagittal approach - 35 (30.7%), (15 of them in the clinic modification). Posterior sagittal anorectoplasty according to Re n a was performed in 17 patients (14.9%), perineal proctoplasty according to Deffenbach - 4 (3.5%), excision of rectovestibular fistula according to Lenyushkin with normally formed anus - 4 (3.5%), abdominoperineal proctoplasty was performed in 5 patients (4.4%).

In 17 patients (14.9%), surgical correction of anorectal anomaly was performed using the posterior sagittal approach. In 6 cases, the length and nature of the incision corresponded to a minor posterosagital anorectoplasty (PSARP). This type of intervention was performed for low fistula forms of ARA and rectovestibular fistula intimately adjacent to the vaginal wall and rectum, as well as in 2 patients with a recurrent rectovestibular fistula. Using this approach, posterior sagittal anorectovaginoplasty (PSARVP) was performed in 3 patients with rectovaginal fistulas and short communications of the urorectal fistula with a persistent cloaca. In 6 cases, the scope of the surgery corresponded to a major PSARP with division and mobilization of the rectum from the vagina at a large distance. In patients with complex rectovaginal fistulas and persistent cloaca, surgery was performed to restore the integrity of the urethra and vagina and bring the rectum down. Like other authors, we believe that the posterior sagittal

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approach allows for a visual assessment of the pelvic floor, minimal trauma to the muscular structures, blood vessels, and nerves, and minimal blood loss. This procedure allows for significant mobilization of the rectum and maximizes the use of local tissue to restore its retaining apparatus. However, this type of intervention, like other perineal surgeries, is not without its drawbacks and complications.

The immediate and long-term results of ARA in girls largely depend on the appropriateness of the correction strategy, which is determined by the severity of the anatomical forms of the defect and the involvement of the rectal sphincter. They are equally dependent on the choice of surgical technique and its accurate implementation.

In the late periods following radical surgeries, various complications were observed in 17 children (14.9%), functional in nature in 13 (11.4%), and organic in 4 (3.5%), requiring repeated surgery or long-term conservative treatment. It should be noted that among patients admitted for the first time, early and late postoperative complications were observed in 6 (5.3%). The highest number of unfavorable postoperative outcomes was observed in 11 (9.6%) among those undergoing repeated operations, whose primary surgeries were performed in other hospitals.

Lack of a clear system for implementing rehabilitation measures, which require a differentiated approach, often leads to disappointing results. In our opinion, long-term rehabilitation measures are of great importance for improving the results of surgical correction in children with anorectal anomaly. During the first 2 years after surgery, all operated children must be hospitalized 3-4 times a year for conservative therapy to form a reflex to empty the bowels at the same time (preferably in the morning); therapeutic physical training, electrical stimulation of the pelvic floor muscles, intestinal peristalsis (No. 10-15 per 1 course), pharmacological therapy (proserin, vitamins B1, B2, $_{B6}$, $_{etc.}$); reflexology; general strengthening treatment; preventive bougienage of the anal canal. In the future,

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this complex of treatments must be repeated on an outpatient basis under the supervision of a pediatric surgeon, and a complex of therapeutic exercises - under the supervision of parents.

In conclusion, it can be noted that The choice of surgical approach and method depend on the anatomical form of the defect, its individual characteristics, including its location, the size of the fistula tract, and the nature of any associated pathology. The anatomical form and location of the defect determine the optimal surgical approach—perineal or abdominoperineal proctoplasty. For low and rectovestibular fistulas, anterior anorectoplasty with a clinical modification is preferred; for intermediate, high, and cloacal fistulas, posterior sagittal anorectoplasty or combined abdominoperineal proctoplasty are recommended.
Performing the main stage of corrective surgery in the neonatal period or early infancy has undeniable advantages. A single-stage surgical approach is preferred, following the principle of maximal radical intervention, but delayed. The optimal time for corrective surgery for fistula-like forms of rectal atresia is considered to be between 3 and 6 months of age.
We consider the following forms of anorectal malformation to be absolute indications for colostomy: persistent cloaca, rectovaginal fistula, and combined defects requiring early emergency surgical correction.

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