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Diagnosis and Treatment of Low Forms of Anorectal Malformations in Newborns

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RESUME: A wide range of pathology from anal ectopia to combined anomalies of the rectum and genitourinary tract refers to malformations of the anorectal region. Many forms require emergency diagnosis and surgical treatment in order to avoid serious complications and death of the child.

On average, the disease occurs in 1: 3500 - 5000 newborns, it is more often found among boys (up to 55-70%), while the most complex variants of defects are also more characteristic of male patients.

KEYWORDS: anorectal defect, diagnosis, surgical treatment.

I. RELEVANCE

Anorectal anomalies in children are one of the most numerous groups of coloproctological pathology, accounting for up to 85% of all diseases of the anorectal region and occurs with a frequency of 1 in 4000-5000, boys predominate. The absence of the anus was well known and recognized since ancient times, because for a diagnosis, it is sufficient to examine the perineum of a newborn child [2]. The treatment consisted in creating a hole in the perineum, however, patients with the so-called "high" forms died after this intervention [4].

For the first time in 1835, Amussat sutured the rectal wall to the skin edges, so this operation can be considered the first true anoplasty. Today, surgeons have at their disposal more than 20 methods of surgical correction of anorectal defects [1]. According to statistics, unsatisfactory results of treatment of anorectal deformities are from 10 to 60%. This is due to a complex of factors: a variety of anatomical variants of the defect, a combination with other developmental anomalies, incomplete preoperative diagnosis, high trauma of traditional methods of correction of anorectal defects, which determines the presence of unsatisfactory functional results against the background of good anatomical reconstruction [3].

The most severe dysfunctions include incontinence of intestinal contents, which leads to an awareness of physical inadequacy and social isolation of the patient, since it is often not possible to restore the function of the external sphincter in full [4]. In these conditions, it is necessary to conduct multiple courses of conservative therapy aimed at the formation of reflex mechanisms of defecation with regular bowel movements. Rehabilitation measures are a necessary stage in the further treatment of children with anorectal defects [3].

Of course, primary surgery is not the only and radical way to correct this pathology and does not lead to a one-stage cure for the patient. But, despite the achievements of coloproctology, a large number of modifications of proctoplasty and modern possibilities of rehabilitation (physical, physiotherapeutic, medication, reflex effects and regime moments) the proportion of unsatisfactory results in various clinics and countries of the world remains quite high and ranges from 10 to 60% [6]. [1,7]. According to the generalized statistics, intestinal incontinence is observed in 30-60% of patients with anorectal defects in the long-term follow-up (3 or more years after the main reconstructive plastic surgery) [3]. The involuntary discharge of feces through the anus leads to severe mental and physical suffering, excludes the child from the active social life of the team, puts him in difficult relationships with his family and others.

Although it has been proven that the combination of a wide range of all the methods available in the arsenal of practical healthcare can improve the long-term results of treatment, but until now, the treatment of children with this pathology is a difficult, staged process that includes not only surgical correction of the defect, but also a long subsequent social and medical rehabilitation, often continuing until the child is transferred to an adult network.

Purpose of work. Development of a methodology and a diagnostic system for the surgical treatment of concomitant anorectal anomalies in young children.



II. MATERIALS AND RESEARCH METHODS

Study and evaluation of patients treated with congenital defects of the lower anorectal region in Andijan regional city and district hospitals for 2021-2023, with data on the history of the disease in the hospital.

Research results. The relationship was revealed between the body weight of the newborn and the distance between the ischial tubercles, which can be defined as the index of perineal development. In newborns with low forms of anorectal malformations, the perineal development index does not differ from healthy ones. In children with intermediate and high forms of APR, a decrease in the index of perineal development was noted ($p < 0.05$).

Morphometric and electrophysiological studies indicate the presence of a pronounced disproportion between the degree of development of the bones of the pelvis and sacrum, perineum and a decrease in the bioelectric activity of the external sphincter of the rectum in children with anorectal malformations, caused by a deficiency of innervation. The higher the location of the atresized area of the rectum, the more pronounced the dysmorphism of the anorectal zone ($p < 0.05$).

The most effective method for diagnosing APR in young children is magnetic resonance imaging, which allows you to determine the shape of the anomaly, the degree of dysmorphism of the bone structures of the pelvis and distal spinal cord, muscles of the levator group, and the localization of recto-organ fistulas.

The proposed methods of treatment with the use of (FABR) for intermediate and high forms of anorectal malformations provide good results in 77% of patients. Functional research methods indicate that this method of treatment has sphincter-saving properties.

Surgical correction of anorectal anomalies based on posterior sagittal anorectoplasty, taking into account the proposed concept of operations, has a higher clinical efficacy compared to traditional brygoshno-perineal interventions according to the criterion of good outcomes: POP - 362.2% (95% CI 361.8 to 362, 6%); PAP - 60.4%; NNL - 1.7 (95% CI 0.2 to 3.1).

According to the criterion of anatomical and functional results of surgical treatment of anorectal defects, the proposed methods of surgical correction contribute to a decrease in unfavorable outcomes compared to traditional methods: RRR ranges from 83.6% (95% CI from 82.2 to 85.0%) to 100% (95% CI from 98.0% to 100%); SAR from 16.7% to 63.4%; NNT from 1.6 (95% CI 1.2 to 2.0) to 12.0 (95% CI 11.4 to 12.5).

The developed mathematical models revealed general changes in the ratio and the degree of influence of factors on the outcome of treatment. Disorders of the distal spine and spinal cord were found to be primary. With a step-by-step sequence, the second place was significantly influenced by the degree of maturity, as well as combined anomalies in the development of other organs and systems.

Within the framework of the developed concept, it was established that the most significant risk factors determining the prognosis of treatment outcome are combined osteoneural anomalies and the index of sacral development. Their informative value for GKS is 30%, for GL - 93.4%, and the total contribution is 72.5%.

Dissection (resection) of the sacrococcygeal segment allows expanding the surgical access to the atresized segment of the rectum when using the posterior perineal access to correct this congenital anomaly, and the possibility of correcting most high forms of anorectal malformation from one posterior perineal access allows to reduce the trauma of the operation as a whole, due to refusal to use the abdominal stage of mobilization of the rectum to bring it down to the perineum.

Expansion of the possibilities of the posterior perineal access due to dissection (resection) of the sacrococcygeal segment makes it possible to correct high forms of anorectal defect when the dome of the atretic intestine is located above the conditional pubococcygeal line.

The formation of a transverse ostomy using the round ligament of the liver to create a spur is the optimal method of palliative intervention as the first stage in the correction of high forms of rectal atresia.

Output. The diagnostic program using the methods of introscopy, functional and morphometric studies allows to identify with high accuracy the variant of the main defect and to verify the entire complex of congenital pathology, which makes it possible to determine the sequence of surgical correction of malformations of the anorectal region.

Concomitant pathology, in particular spinal anomalies and myelodysplasia, negatively affects the outcomes of radical surgery. Therefore, predicting long-term functional outcomes based on mathematical modeling methods makes it possible to individualize options for corrective operations for combined malformations of the anorectal region.

The expediency of maintaining the integrity, and in a number of situations, the reconstruction of the external anal sphincter when performing the correction of anorectal anomalies has been proved.



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