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IMPROVEMENT OF THE TREATMENT AND PREVENTION OF POSTOPERATIVE COMPLICATIONS IN CHILDREN WITH ANORECTAL MALFORMATIONS

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Abstrac

Anorectal malformations in children are complex congenital defects often associated with postoperative complications. Anorectal sphincter insufficiency remains one of the most severe outcomes and significantly affects bowel function and quality of life. Repeated reconstructive surgeries are frequently required and are associated with increased risks.

Aim: To improve the results of surgical treatment of anorectal malformations in children by reducing postoperative complications.

Materials and Methods: A total of 337 children with anorectal malformations were treated between 2007 and 2021. Postoperative anorectal insufficiency developed in 102 patients (30.2%). For detailed analysis, 58 patients were selected and divided into two groups: those who received rehabilitation therapy before and after repeated reconstructive surgeries and those who did not. Comprehensive clinical, instrumental, and functional diagnostic methods were used.

Results: Diagnostic errors accounted for 39% of unsuccessful primary corrections, while tactical and technical errors accounted for 61%. Patients who received rehabilitation therapy showed improved anal sphincter function, better fecal continence, fewer strictures, and longer intervals between surgeries. Functional outcomes improved in 30% of these patients.

Conclusion: Surgical treatment of anorectal malformations is a multistage and complex process. Comprehensive diagnostics, individualized surgical tactics, and mandatory rehabilitation therapy before and after each reconstructive stage significantly improve functional outcomes and reduce the need for repeated operations.

Keywords

Anorectal malformations; children; postoperative complications; anorectal sphincter insufficiency; reconstructive surgery; rehabilitation therapy; functional outcomes; fecal continence.

Introduction

Anorectal malformations in children occupy an important place among congenital developmental defects [11,18]. This pathology is most often detected in newborns and young children [2,18]. The disease is characterized by a complex clinical course [19,21]. Along with anatomical defects, functional disorders also develop [10,15]. Surgical treatment of anorectal malformations is one of the most responsible areas of pediatric surgery [16,18]. Even when the primary operation is performed correctly from a technical point of view, postoperative complications may still occur [6,17,20]. Among these complications, anorectal sphincter insufficiency occupies a leading position [9,28]. Postoperative anorectal insufficiency is manifested by inability to control defecation. Constipation or diarrhea may develop [5,9,24]. These conditions negatively affect the physical development of the child [14]. The process of social adaptation is impaired [10,11]. As a result, the child's quality of life significantly decreases [10,13]. Many patients require repeated reconstructive surgical interventions [12,15,17]. Such operations are often performed under difficult conditions [6,19]. Cicatricial changes after previous surgeries limit surgical possibilities [22,23]. The risk of complications increases [20,21]. Therefore, in the treatment of anorectal malformations, elimination of the anatomical defect alone is not sufficient [2,16]. Achieving functional outcomes should be the

main goal [18,28]. Rehabilitation therapy plays an important role in improving the effectiveness of repeated reconstructive operations [8,15,17]. A comprehensive and stepwise approach in this direction is considered relevant [11,16,25].

Aim. To improve the results of surgical treatment of anorectal malformations in children.

Materials and Methods. During the period from 2007 to 2021, 337 patients with anorectal malformations were observed at the bases of the 1st Children's Clinical Hospital of Tashkent and the Samarkand Regional Children's Hospital [19,20]. All patients underwent various types of primary corrective surgical procedures. In the postoperative period, 102 patients (30.2%) required repeated surgical intervention due to anorectal sphincter and rectal insufficiency [15,17]. These patients were subjected to retrospective catamnesis analysis [19,20]. From these 102 patients, 58 patients with similar clinical conditions and forms of pathology were selected for in-depth analysis [3,4]. These patients were divided into two groups. Group 1 included 33 patients. They received rehabilitation therapy before and after each repeated reconstructive operation [8,15]. Group 2 included 25 patients. These patients did not receive rehabilitation therapy [17]. The age of the patients ranged from under 1 year to 18 years [3,4]. There were 57 boys and 45 girls. A total of 228 repeated reconstructive operations were performed in all patients [12,17]. Examinations were carried out comprehensively. Medical history and catamnesis were collected [3,19]. Clinical and rectal examinations were performed [2,10]. Laboratory tests were conducted [14]. Ultrasonography of the abdominal cavity and pelvic organs was performed [1,4]. Dopplerography was applied [8]. Myography of the sphincter apparatus was carried out. Radiological, magnetic resonance imaging, and endoscopic examinations were performed [13,16].

Results

According to the analysis, failure of primary surgical correction was associated with diagnostic errors in 39% of cases [4,12]. Tactical and technical errors accounted for 61% [6,17]. Diagnostic errors were related to incorrect determination of the level of atresia [19]. Failure to detect urethral fistulas was also a significant cause [6,7]. Incorrect identification of malformations was noted [21]. Tactical errors were explained by incorrect selection of indications for primary surgery or colostomy [6,18]. Technical errors included urethral injury [4,17]. Damage to the anal sphincter apparatus was recorded [10,12]. Insufficient mobilization of the distal segment of the colon was identified [21,28]. Repeated reconstructive operations were performed under difficult conditions [12,17]. Severe cicatricial changes in tissues were present [19,25]. The choice of surgical techniques was limited [15,18]. In Group 1 patients who received rehabilitation therapy, anal sphincter function improved [8,15]. The ability to retain feces increased [18,28]. Anal strictures were observed less frequently [15,25]. The interval between repeated operations increased. In this group, functional outcomes improved significantly in 30% of patients [15,25]. In Group 2 patients who did not receive rehabilitation therapy, cicatrization developed more rapidly [22,23]. Anal strictures occurred more frequently [12,17]. The number of repeated operations increased [20,21].

Discussion. The obtained results showed that the risk of complications increases with the number of repeated reconstructive operations [19,20]. The development of cicatrization and strictures accelerates [22,25]. Absence of rehabilitation therapy negatively affects functional outcomes [8,15]. Rehabilitation before and after each surgical stage is essential [8,15,16]. It improves tissue blood supply [1,8]. It helps preserve innervation [18]. It increases the possibility of restoring sphincter function [15,28].

Conclusion. Surgical treatment of anorectal malformations in children is a complex and multistage process [2,18]. Postoperative anorectal sphincter insufficiency is one of the most

severe complications [10,12,17]. To improve the effectiveness of repeated reconstructive operations, thorough and comprehensive diagnostics are required [13,16]. An individual surgical tactic should be selected for each patient [2,18]. Rehabilitation therapy before and after each surgical stage is mandatory [8,15,16]. This approach improves functional outcomes [10,25,28]. It reduces the number of repeated operations [20,21,22,23,24,26,27].

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