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QUALITY OF LIFE IN CHILDREN WITH HIRSCHSPRUNG'S DISEASE AFTER SURGERY DE LA TORRE-ORTEGA

Akilov Khabibulla Ataullaevich.
Doctor of Medical Sciences,
Khabibulla Ataullaevich Akilov
Doctor of medical sciences,
Professor, Head of the Department of Surgery,
Pediatric surgery of the center for professional development of medical workers
Umidzhon Shokirovich Mamajanov
Senior Lecturer, Department of Pediatric Surgery
Andijan State Medical Institute
Mirzakarimov Bakhrom Halimzhonovich.
Candidate of Medical Sciences, Associate Professor ,
Head of the Department of Pediatric Surgery
Andijan State Medical Institute
Toshboev Sherzod Olimovich
Candidate of Medical Sciences, Associate Professor,
Head of Chair of Anesthesiology-Resuscitation,
Children Anesthesiology and Resuscitation
Andijan State Medical Institute

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Abstract:
The article presents the results of the study of functional activity and quality of life in children with Hirschsprung's disease operated on using the improved DeLaTorre-Ortega method and the classical Soave-Lenyushkin method. Quality of life of operated children was assessed using the adapted PedsQL™4.0 scale, which included a total of 21 questions assessing physical, emotional, social, and role functioning. Analysis of quality of life in children with Hirschsprung's disease showed a significant increase in all scales when the improved DeLaTorre-Ortega procedure was performed, up to 84.1-92.3%, with a change in the total score from 52.8±10.0 to 70.4±6.4 (t=6.79; p<0.001) in relation to the healthy children group.

Keywords: Hirschsprung's disease, quality of life, functional activity, children

INTRODUCTION. Hirschsprung's disease is a fairly common developmental abnormality; it should be noted that the incidence of Hirschsprung's disease according to T.J. Bradnock [1], for several decades has ranged from 1:30,000 to 1:2,000 to the total number of newborns. The average incidence of Hirschsprung's disease worldwide is estimated at approximately 1 case per 5,000 live births. In the vast majority of cases, this pathology is symptomatic in the neonatal period or in early infancy [2,4]. Early radical intervention with resection of the aganglionic zone is the most optimal method of BG treatment.

Today, radical one-stage surgical treatment using minimally invasive surgical techniques is becoming increasingly common in Hirschsprung's disease. Modern surgical methods of Hirschsprung's disease treatment in neonates and infants allow reducing mortality and improving outcomes [3,5,10].

Transanal resection is currently one of the most commonly used surgeries for the treatment of HD worldwide. Over the past decades, this method has undergone some technical changes. However, these interventions are still associated with many potential complications, which can lead to irreversible deterioration of functional outcome and significant social limitations [8,12]. The most popular interventions are transanal methods Soave and Swenson [7,13]. The introduction of these types of surgeries has resulted in shorter hospitalization and fewer postoperative complications. However, even when they are performed, the risk of various complications remains [2].

In 1998, Dela Torre, using a single-stage transanal endorectal resection of the colon to surgically treat Hirschsprung's disease, prevented the use of laparotomy [3]. However, the use of this surgery for total and subtotal forms of Hirschsprung's disease is not possible. Laparoscopic surgery for HD has recently become increasingly widespread. However, as with traditional interventions, these operations are also

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characterized by the possibility of postoperative complications in the form of constipation (7.1-22.2%) and infection (8.9-14.8%) [6].
In recent years, they have begun to study the quality of life of patients with various diseases, the effectiveness of their treatment and rehabilitation [4]. When assessing the results of surgical treatment of Hirschsprung's disease, it is particularly important to study one aspect of quality of life - the index of vital signs.
Objective of the study. To study parameters of functional activity and quality of life in children with Hirschsprung's disease operated on by the DeLa Torre-Ortega method.

MATERIAL AND METHODS: 21 children operated for Hirschsprung's disease at the clinical bases of children surgery department of Andijan State Medical Institute were included in the research. The patients were aged from 2 to 18 years. 4 (19.04%) patients were admitted to the clinic in the decompensation stage, 12 (57.14%) - in the subcompensation stage, 5 (23.8%) - in the compensation stage. Advanced DeLaTorre-Ortega operation technique was performed in 13 (61,9%) children and transanal resection of large intestine by classical Soave-Lenushkin technique was performed in 8 (38,1%) children. During the quality of life study, children with Hirschsprung's disease and their parents filled out the PedsQL™4.0 questionnaire, translated into Uzbek, child and parent forms, respectively, before surgery and 1 year after surgery [4, 5]. Children from the age of 2 years (the minimum age for quality of life assessment) were included in the study. Given the small number of examinees, the results of the questionnaires of children of different ages were combined; accordingly, the parents' answers were also combined. Fifteen healthy children were also surveyed for comparative evaluation.
The questionnaire consisted of 21 questions, which were represented by the following scales:
- Physical functioning (PF) - 8 questions,
- emotional functioning (EF) - 5 questions,
- social functioning (SF) - 5 questions,
- Role functioning (RF) - kindergarten functioning (FDS) or school functioning (SF) - 3 questions (depending on children's age).
1. PhysicalFunctioning (PF), reflecting the degree to which physical condition limits performance of physical activities (self-care, walking, climbing stairs, carrying weights, etc.).
2. Emotional functioning (Role-Emotional - RE) involves an assessment of the extent to which an emotional state interferes with the performance of work or other daily activities (including greater time commitment, reduced workload, reduced quality of work).
3. SocialFunctioning (SF), is defined by the degree to which a physical or emotional condition limits social activity (communication).
4. Role-PhysicalFunctioning (RP) - the effect of physical state on daily role activities (work, daily duties). The questionnaire is divided into blocks by age - 5-7, 8-12, and 13-18 years old, which have forms for children and parents to fill out, and a block for children 2-4 years old (filled out by parents only). For children under 5, the questions were answered by parents, and from the age of 5 - by children themselves. The child and parents were asked to choose one of the proposed answers to each question in the corresponding (child and parent) form of the questionnaire. The total number of points for all modules was calculated on a 100-point scale after the scaling procedure: the higher the final value, the better the quality of life of the child. Statistical significance of the obtained measurements when comparing the mean values was determined by Student's test (t) with the calculation of the probability of error (P) when checking the normality of the distribution (kurtosis test) and equality of the general variances (F - Fisher's test). The statistically significant changes were considered to be the level of reliability P<0,05.

RESULTS OF THE STUDY AND THEIR DISCUSSION. When comparing the quality of life indicators in the healthy children group and in the main group before surgery (Table 1), the total score (GV) in the main group before surgery was 52.8±10.0 (t=9.61, p<0.001), whereas in healthy children this indicator varied within 79.6±6.7.

Table 1.
Quality of life indicators in the healthy children group and in the main group before surgery

Scale	Normative values (n=15)	Main group - e/o (n=21)	t	
			Value	P
Physical functioning (PF)	84,3±9,2	52,9±11,9	8,93	<0,001
Emotional functioning (EF)	76,7±10,1	54,3±11,0	6,31	<0,001
Social functioning (SF)	83,3±7,2	51,7±10,6	10,62	<0,001

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Role functioning (RF)	74,0±8,3	52,4±8,7	7,54	<0,001
Overall score (average) (OB)	79,6±6,7	52,8±10,0	9,61	<0,001

When comparing the quality of life indicators in the study groups 12 months after surgery, the results changed with positive dynamics (Table 2).

Table 2.
Quality of life indicators in the compared groups 12 months after surgery

Scale	Main group - p/o (n=21)	T= to normal		Comparison group - p/o (n=15	T= to norma		t between groups	
		Value	P		Value	P	Value	P
Physical functioning (PF)	71,0±8,6	4,41	<0,001	64,7±7,2	6,51	<0,001	-2,38	<0,001
Emotional functioning (EF)	69,3±7,6	2,38	<0,05	64,3±5,9	4,07	<0,001	-2,19	<0,05
Social functioning (SF)	72,9±6,4	4,48	<0,001	65,7±8,6	6,07	<0,001	-2,73	<0,01
Role functioning (RF)	68,3±6,0	2,26	<0,05	62,7±5,0	4,55	<0,001	-3,10	<0,001
Overall score (average) (OB)	70,4±6,4	4,15	<0,001	64,3±4,4	7,39	<0,001	-3,37	<0,001

Thus, the index of FF, EF, SF, RF and OB in all patients of the main group significantly improved. In particular, FF in the main group after surgery was 71.0±8.6 (t=4.41; P<0.001), in the comparison group it was 64.7±7.2 (t=6.51; P<0.001).

Figure 1 shows the dynamics of quality of life index in the main group before and 12 months after surgery in children with HD. Quality of life indicators in the main group in children with HD improved: SF 1.4-fold (from 51.7% to 72.9%) (t=7.81; p<0.001), FF 1.3-fold (from 52.9% to 71.0%) (t=5. 65; p<0.001), EF (from 54.3% to 69.3%) (t=5.14; p<0.001), and RF (from 52.4% to 68.3%) (t=6.90; p<0.001), and OB increased from 52.8% to 70.4% (t=6.79; p<0.001).

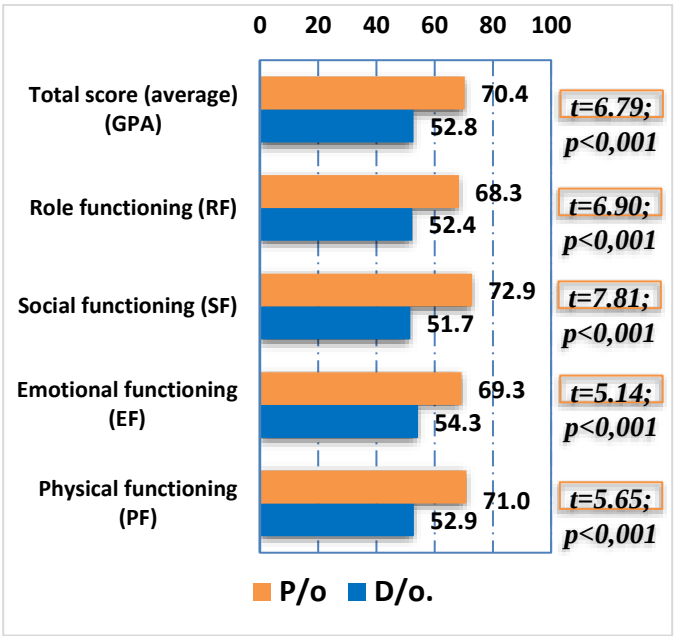

Fig. 1. Dynamics of quality of life index in the main group before and 12 months after surgery

A more clear picture of the ratio of quality of life indicators in the comparison groups at 12 months after surgery to healthy children can be seen in the diagram in Figure 2.

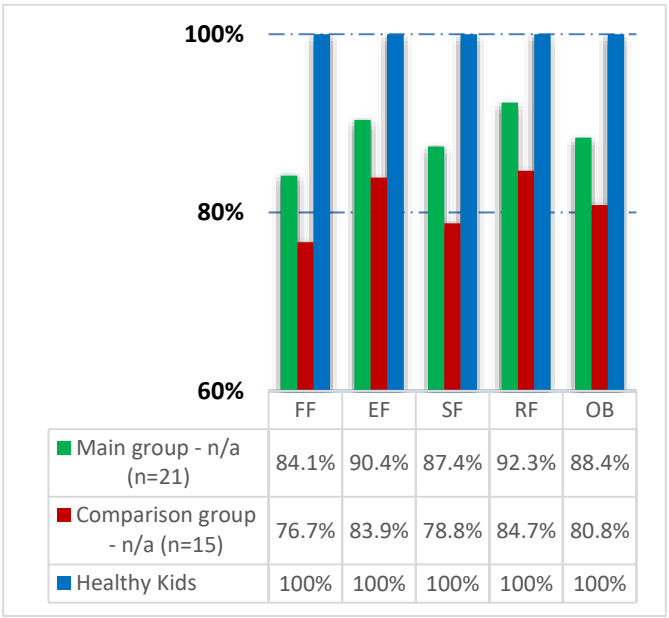

Fig. 2. Ratio of quality of life indicators in comparison groups at 12 months after surgery to healthy children

Thus, the ratio of quality of life indicators in children with HD in the postoperative period to healthy children was minimized for "role functioning" (92.3%),

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"emotional functioning" (90.4%), and "total score" (88.4%), respectively.

Thus, analysis of quality of life in children with Hirschsprung's disease showed significant improvement on all scales one year after surgical treatment, with a higher degree of improvement ($p<0,05$) when performing the improved DeLaTorre-Ortega operation technique (on average from 62,0-70,8% on all scales before surgery to 84,1-92,3% in relation to the healthy children group) with a change in the total score from 52,8±10,0 to 70,4±6,4 ($t=6,79$; $p<0,001$), in turn, transanal resection of the colon according to the classical Soave-Lenushkin method allowed to reach compliance with the group of healthy children at the average level of 76,7-84,7% with the increase of the total score only up to 64,3±4,4.

Application of the modified DeLaTorre-Ortega method of operation in children with Hirschsprung's disease allowed to improve all main parameters to estimate the quality of the immediate postoperative period course ($p<0,05$ - in comparison of analgesia duration, peristalsis restoration, enteral feeding start and activation period of patients) as well as to reduce the total complication rate from 63,8% to 31,6% ($\chi2=8,743$; $p=0,743$); $Df=1$; $p=0,004$) and, respectively, hospitalization period from 22,1±3,2 to 15,1±5,2 days ($t=7,23$; $p<0,001$). Improvement of the tactical and technical aspects of surgical treatment of children with Hirschsprung's disease together with a comprehensive program of postoperative rehabilitation allowed us to improve functional results, the value of which more corresponded to the normative indicators in healthy children.

CONCLUSIONS: In terms of follow-up up up to 12 months after surgical treatment of children with Hirschsprung's disease in the main group, incidence of functional-organic complications (anal stenosis, constipation, encopresis) decreased from 40,4% to 18,4% ($\chi2=4,792$; $Df=1$; $P=0,029$), which in general increased the proportion of good results from 46,8% to 73,7% ($\chi2=7,046$; $Df=2$; $P=0,030$). Analysis of quality of life in children with Hirschsprung's disease showed significant increase of scores on all scales one year after surgical treatment, with improvement degree being higher ($p<0,05$) at application of advanced technique of DeLaTorre-Ortega surgery (on average from 62,0-70,8% on all scales before surgery to 84,1-92,3% in relation to healthy children group) with change of total score from 52,8±10,0 to 70,4±6,4 ($t=6,79$; $p<0,001$), in turn, transanal resection of the colon according to the classical Soave-Lenyushkin method allowed to reach compliance with the group of healthy children at the average level of 76,7-84,7% with the increase of the total score only up to 64,3±4,4.

LIST OF LITERATURE

1. Bradnock TJ, Knight M, Kenny S, Nair M, Walker GM; British Association of Paediatric Surgeons Congenital Anomalies Surveillance System. Hirschsprung's disease in the UK and Ireland: incidence and anomalies. Arch Dis Child. 2017 Aug;102(8):722-727. doi: 10.1136/archdischild-2016-311872. Epub 2017 Mar 9. PMID: 28280094; PMCID: PMC5537519.
2. Byström C, Östlund S, Hoff N, Wester T, Granström AL. Evaluation of Bowel Function, Urinary Tract Function, and Quality of Life after TransanalEndorectal Pull-Through Surgery for Hirschsprung's Disease. Eur J Pediatr Surg. 2021 Feb;31(1):40-48. doi: 10.1055/s-0040-1715612. Epub 2020 Sep 2. PMID: 32877942.
3. De la Torre-Mondragón L, Ortega-Salgado JA. Transanalendorectal pull-through for Hirschsprung's disease. J Pediatr Surg. 1998 Aug;33(8):1283-6. doi: 10.1016/s0022-3468(98)90169-5. PMID: 9722005.
4. Dingemann J, Dellenmark-Blom M, Quitmann JH. Health-Related Quality of Life in Pediatric Surgical Patients and their Caretakers. Eur J Pediatr Surg. 2020 Jun;30(3):223-224. doi: 10.1055/s-0040-1713596. Epub 2020 Jul 12. PMID: 32654109.
5. Khamdamov B.Z. Indicators of immunocitocine status in purulent-necrotic lesions of the lover extremities in patients with diabetes mellitus.//American Journal of Medicine and Medical Sciences, 2020 10(7) 473-478 DOI: 10.5923/j.ajmm.2020.- 1007.08 10.
6. M. I. Kamalova, N.K.Khaidarov, Sh.E.Islamov,Pathomorphological Features of hemorrhagic brain strokes, Journal of Biomedicine and Practice 2020, Special issue, pp. 101-105
7. Kamalova Malika Ilkhomovna, Islamov Shavkat Eriyigitovich, Khaidarov Nodir Kadyrovich. Morphological Features Of Microvascular Tissue Of The Brain At Hemorrhagic Stroke. The American Journal of Medical Sciences and Pharmaceutical Research, 2020. 2(10), 53-59
8. Khodjieva D. T., Khaydarova D. K., Khaydarov N. K. Complex evaluation of clinical and instrumental data for justification of optive

World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-12, July 2022
ISSN: 2749-3644

treatment activites in patients with resistant forms of epilepsy. American Journal of Research. USA. № 11-12, 2018. C.186-193
9. Khodjieva D. T., Khaydarova D. K. Clinical and neuroph clinical and neurophysiological ch ogical characteristics of teristics of post-insular cognitive disorders and issues of therapy optimization. Central Asian Journal of Pediatrics. Dec.2019. P 82-86
10. Sadriddin Sayfullaevich Pulatov. (2022). Efficacy of ipidacrine in the recovery period of ischaemic stroke. World Bulletin of Public Health, 7, 28-32.
11. ZwintscherNP1, Johnson EK, Martin MJ, Newton CR. //The use of laparoscopy and outcomes of appendicitis in young children./J Pediatr Surg. 2013 Sep;48(9):1941-5.
12. Garcia LFDS, Manna TD, Passone CGB, Oliveira LS. Translation and validation of Pediatric Quality of Life Inventory™ 3.0 Diabetes Module (PedsQL™ 3.0 Diabetes Module) in Brazil-Portuguese language. J Pediatr (Rio J). 2018 Nov-Dec;94(6):680-688. doi: 10.1016/j.jped.2017.09.009. Epub 2017 Nov 14. PMID: 29144963
13. Jiao C, Yu D, Li D, Wang G, Feng J. A Long-Term Follow-Up of a New Surgery Method: Laparoscope-Assisted Heart-Shaped Anastomosis for Hirschsprung's Disease. J LaparoendoscAdvSurg Tech A. 2018 Apr;28(4):471-475. doi: 10.1089/lap.2017.0275. Epub 2017 Nov 30. PMID: 29190183.
14. Levitt MA, Hamrick MC, Eradi B, Bischoff A, Hall J, Pena A. Transanal, full-thickness, Swenson-like approach for Hirschsprung disease. J Pediatr Surg. 2016;48(11):2289–2295.
15. Pakarinen M. Perioperative Complications of Transanal Pull-through Surgery for Hirschsprung's Disease. Eur J Pediatr Surg. 2018 Apr;28(2):152-155. doi: 10.1055/s-0038-1632393. Epub 2018 Feb 19. PMID: 29458231.