

რეზიუმე

მრავლობითი საეტაპო ციტორედუქციული ოპერაციები საშვილოსნოს მიომის რეციდივის დროს (შემთხვევა პრაქტიკიდან)

სხეტვერიკოვი, ვმაქსიმოვსკი, დატანასოვი, მხეტვერიკოვი, ვხეტვერიკოვა-ოფინინიკი

ოღვის ეროვნული სამედიცინო უნივერსიტეტი, №3 ქირურგიული განყოფილება, რეკონსტრუქციული და აღდგენითი მედიცინის ცენტრი (საუნივერსიტეტო კლინიკა), უკრაინა

საშვილოსნოს ლეიომიოსარკომა იშვიათი ავთვისებიანი ვინეკოლოგიური ახალწარმონაქმნია, რეციდივების მაღალი სისშირით და ცუდი პროგნოზით.

სტატიაში წარმოდგენილია საშვილოსნოს მრავალჯერადად მორეციდივე სარკომის მქონე 61 წლის ქალის კლინიკური შემთხვევა, რომელსაც მკურნალობდნენ მრავლობითი ციტორედუქციული ოპერაციებით.

დაკვირვების პერიოდში განხორციელდა 13 ქირურგიული ჩარევა. ოპერაციების შედეგად, 60 ლიტრის მოცულობის სიმსივნური მასის მოცილებასთან ერთად, ჩატარდა: საშვილოსნოს და დანამატების ექსტირპაცია, მარჯვენამხრივი ჰემიკოლექტომია, წვრილი ნაწლავის რეზექცია ოთხჯერ, სიგმოიდური ნაწლავის რეზექცია, თორმეტგოჯა ნაწლავის რეზექცია, პერიტონექტომია,

ქოლეცისტექტომია, აპენდექტომია, ადიუვანტური ქიმიოთერაპიის ორი კურსი და მუცლის ღრუს შიდა პიპერთერმიული ქიმიოთერაპიის პროცედურა. ამ პერიოდის განმავლობაში, შესვენებებით სტაციონარული მკურნალობის დროს, პაციენტი მუშაობდა მასწავლებლად, სიცოცხლის ხარისხი დამაკმაყოფილებელი იყო. დაკვირვება პაციენტზე გაგრძელდა; კომპიუტერული ტომოგრაფიის საკონტროლო მონაცემების მიხედვით (ბოლოს – 12.02.2021) სიმსივნის რეციდივის ნიშნები არ გამოვლინდა. პირველი კლინიკური რეციდივის მომენტიდან გასულია 64 თვე. საერთო გადარჩენადობამ შეადგინა 69 თვე, რაც უკვე აღემატება თეორიულად მიუღწევებელ 5 წელს დაავადების დაწყების მომენტიდან.

ციტორედუქციული ქირურგია პაციენტებში მუცლის ღრუს ქიმიო- და რადიორეზისტენტული სიმსივნეებით წარმოადგენს ამ ჯგუფის პაციენტების მკურნალობის ერთადერთ ეფექტურ მეთოდს, სიმპტომურ თერაპიასთან ერთად. განმეორებითა აღრეულმა ოპტიმალურმა ციტორედუქციამ აღმოჩენილი სიმსივნური მასის მაქსიმალურად შესაძლო ამოკვეთით და დაზიანებული ორგანოების ანატომიური და ფუნქციური მთლიანობის აღდგენით შესაძლოა შეამციროს სიმსივნური კახეკსიის, ინტოქსიკაციის, ანემიის, თრომბოზების, სისხლჩაქცევების, შეშუპების, საჭმლის მომხელებელი და საშარდე სისტემების დისფუნქციის ალბათობა, რაც ზრდის სიცოცხლის ხანგრძლივობას და აუმჯობესებს მის ხარისხს პაციენტებში საშვილოსნოს სარკომის მეორე და მეტი რეციდივით.

COMPARATIVE ANALYSIS OF NEUROSURGICAL ASPECTS OF NEONATAL INTRAVENTRICULAR HEMORRHAGE TREATMENT

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Damage of the central nervous system is one of the leading causes of early illness, disability and death in newborns. In preterm infants, intraventricular hemorrhage is one of the most difficult and common forms of brain damage. Intraventricular hemorrhage frequently causes severe neurological damage and fatality in children. Among the neonates with gestational age of less than 29 weeks, intraventricular hemorrhage rate ranges from 20% to 30% [5]. For the neonates weighing less than 1500 grams, the probability of developing the intraventricular hemorrhage ranges between 15% -20%, [9]. The lower the gestational age and body mass is, the more common the severe intraventricular hemorrhages are. Murphy et al. published the study showing that the half of newborns with intraventricular hemorrhage do not develop ventricular dilatation, the quarter develops non-progressive ventricular dilatation, and the remaining quarter de-

velops ventricular dilatation with posthemorrhagic hydrocephalus [1]. Several methods are currently available for treatment of posthemorrhagic progressive ventricular dilatation, including: 1. Serial lumbar/ventricular puncture 2. Ventriculostomy 3. Implantation of ventricular subcutaneous reservoir 4. Ventriculo-subgaleal shunting 5. Endoscopic ventricular irrigation [6].

There is a lot of discussion throughout the world literature concerning the safest and most optimal methods [6-8]. This study seeks to present the results obtained by our clinic. Three methods were used in our medical center for treatment of: 1. Serial ventricular/lumbar puncture 2. Ventriculostomy 3. Implantation of ventricular subcutaneous reservoir.

Material and methods. 39 medical cases were studied retrospectively, all the patients were treated at the Neonatology Department of Ghudushauri National Medical Center, in 2016-

2020. In all patients, the ventriculomegaly/hydrocephalus were caused by preceding intraventricular hemorrhage. 2 patients had Grade 1 intraventricular hemorrhage and 22 newborns - Grade 2 intraventricular hemorrhage (56.41%), 10 newborns - Grade 3 intraventricular hemorrhage (25.64%), 5 newborns – Grade 4 intraventricular hemorrhage (12.82%). As an initial neurosurgical intervention, 23 and 11 neonates underwent ventricular reservoir implantation (A) and ventriculostomy (B), respectively; 5 newborns received the serial ventricular/lumbar punctures (C). Complications, eventual need for shunting, the frequency of intracranial cyst formation and the rate of complication with meningitis were studied retrospectively. These patients were divided into three groups - A, B and C. 20 female (51.28%) and 19 male (48.71%) patients were studied. For Group A, the mean gestational age was 29.78 weeks, with average birth weight of 1531.30 grams. For Group B, the mean gestational age was 27.36 weeks, with average birth weight of 1058.18 grams. For Group C, the mean gestational age was 29.4 weeks, with average birth weight of 1290 grams. The weight and gestational age of the newborns included in the study ranged from 650 to 2500 grams and from 24 to 35 weeks, respectively. In addition, the study considered the maternal gynecological history, type of delivery and correlation of these factors with final outcome. In all cases, intraventricular hemorrhage was diagnosed through the ultrasound examination. Preoperatively, all patients were examined via the brain CT scan. Postoperative ventricular dilatation was monitored through the serial ultrasound examination. The grades of hemorrhage were identified in accordance with

the Papile classification system. For ventriculoperitoneal shunting, the Medtronic system shunt (CSF-Flow Control Valve, Burr Hole) was used, and the Medtronic 12 mm Burr Hole, with Integral Ventricular Catheter, Small, Barium Impregnated, 5.5 cm was applied as a ventricular reservoir.

Results and discussion. A total of 39 patients underwent 104 neurosurgical operations, averaging 2.66 surgeries per newborn. On average, the patients were followed up for 43.15 days after the last surgery (2-320). Out of 39 newborns involved in the study, 30 patients required ventriculoperitoneal shunting (76.92%), 2 of which were transferred abroad, and 28 patients underwent this surgery at our clinic. The lethal outcomes in neonates with surgical shunting were observed in 3 cases (7.69%).

The minimum weight of the newborns at the time of shunting surgery was 1800 grams. 8 patients required shunt revision (one or more repeated shunting surgeries). For this type of surgery, no correlation was found between the shunt dysfunction and low newborn birth weight.

Out of 9 patients who did not require shunting, 5 (12.82%) were discharged from the clinic without any need for permanent liquor drainage surgery, 4 (10.25%) patients died.

Out of 39 newborns, 7 (17.98%) patients died. The average number of neurosurgical interventions in deceased patients was 2 (minimum 1, maximum 5). Out of the deceased neonates, 2 were female and 5 male. In no case did gestational age exceed 30 weeks (mean gestational age 26.85). The average birth weight was 880 grams. The types of delivery were: 5 caesarean sections and 5 vaginal births. In 4 cases the mothers were the primiparas

Table 1. Patient characteristics

Variable	Group - A	Group - B	Group - C
No of patients	23	11	5
Median gestation age at birth (wks +days)	29 +4	27+ 2	29+3
Median Weight at birth (g)	1531.30	1058.18	1290
IVH Grade			
I	8.69%	0	0
II	60.86%	45.45%	60%
III	26.08%	36.36%	20%
IV	4.34%	18.18%	20%
Median postnatal Age at first intervention(wks +days)	6 week	3 week + 6	7 week +6
Type of delivery			
Caesarian Section	82.60%	90.90%	80%
Vaginal delivery	17.39%	9.09%	20%

Table 2. Patient characteristics

Variable	Group - A	Group - B	Group - C
Sex			
Male %	43,47	72,72	40
Female %	56,52	27,27	60
number of birth			
I%	30.43	45.45	40
II%	26.03	27.27	0
III%	30.43	18.18	40
IV%	8.69	9.09	20
V%	4.34	0	0

and in 2 and 1 cases there were the second and fourth childbirths for the mothers, respectively. Among these newborns, the intraventricular hemorrhage was manifested in 5 cases - at week 1, in 1 case - at week 3 and in 1 case - at week 4 of life. As for the grades of intraventricular hemorrhage: in 2 cases - Grade 2, in 4 patients - Grade 3 and 1 patient was diagnosed with the Grade IV intraventricular hemorrhage. On average, the first surgery was performed at the 42nd day after birth (30-57). On average, the fatalities were observed at the 35th day after diagnosing the hemorrhage (17-56). The average life expectancy was 138 days (32-512).

For the Group A, the mean gestational age was 29.78 weeks, with average birth weight of 1531.30 grams. 10 patients were female (43.47%) and 13 patients were male (56.52%). The average number of neurosurgical interventions for Group A was 2.43 [1-7]. Delivery type: in 19 cases - caesarean section (82.60%) and in 4 cases - vaginal delivery (17.39%). For the mothers, there were the first childbirths - in 7 cases (30.43%), the second childbirths - in 6 cases (26.08%), the third childbirths in 7 cases (30.43%), the fourth childbirths - in 2 cases (8.69%) and the fifth childbirth - in 1 case (4.34%). In 19, 2 and 2 neonates, the intracranial hemorrhage was manifested in the week 1 (82.60%), week 2 and week 4 of life, respectively.

In this group, 2 (8.69%) newborns were diagnosed with Grade 1 intraventricular hemorrhage, 14 (60.86%) newborns - with Grade 2 intraventricular hemorrhage, 6 (26.08%) - with Grade 3 intraventricular hemorrhage and 1 (4.34%) - with Grade 4 intraventricular hemorrhage. In group A, the first surgery was performed on average on the 44th day after the birth (20-190), and the average time interval from diagnosing the hemorrhage to the first surgery was 36 days (17 - 130). In group A, 17 (73.91%) newborns required shunting during their stay in the clinic, 2 (8.69%) of them were transferred abroad for further treatment, although these patients needed shunting. 2 (8.69%) patients died, 3 (17.39%) patients were discharged with the ventricular reservoir, 1 patient underwent removal of ventricular reservoir. At final neurosonoscopy: Grade 1 dilatation was revealed in 3 (13.04%) patients, Grade 2 dilatation - in 2 (8.69%), Grade 3 dilatation - in 11 (47.82%) patients, hydranencephaly (severe form of leukomalacia) - in 5 (21.73%); 2 (8.69%) patients died. In group A, a total of 13 (56.52%) (8.69%) developed the intracerebral cysts.

For the Group B, the mean gestational age was 27.36 weeks, with average birth weight of 1058.18 grams. 8 (72.72%) pa-

tients were female and 3 (27.27%) patients were male. The average number of neurosurgical interventions in group B was 3.72 (1-11). In 10 (90.90%) cases, the type of delivery was a cesarean section and in 1 (9.09%) case - vaginal birth. For the mothers, there were the first childbirths in 5 (45.45%) cases, the second childbirths - in 3 (27.27%), the third childbirths - in 3 (18.18%), and the fourth childbirth - in 1 (9.09%) case. In 9, 1 and 1 neonates, the intraventricular hemorrhage was manifested in the week 1 (81.81%), week 2 (9.09%) and week 4 (9.09%) of life, respectively. Grade 2, Grade 3 and Grade 4 intraventricular hemorrhage was detected in 5 (45.45%), 4 (36.36%) and 2 (18.18%) patients, respectively.

In group B, the first surgery was performed on average on the 27th day after birth (5-56) and the average time interval from diagnosing the hemorrhage to the first surgery was 22 days (3 - 52). Among group B patients, 8 (72.72%) newborns required shunting during their stay in the clinic, 2 (18.18%) patients died, and 1 (9.09%) patient was not in need of shunting.

At final neurosonoscopy: ventricular system without dilatation - 1 (9.09%) patient, Grade 2 dilatation - 1 (9.09%) and severe cystic leukomalacia - 7 (63.63%); 2 (18.18%) patients died. In group B, a total of 9 (81.81%) patients developed intracranial cysts.

For the Group C, the mean gestational age was 29.4 weeks, with average birth weight of 1290 grams. 2 (40%) patients were female and 3 (60%) patients were male. In group C, the average number of neurosurgical interventions was 1.4 (1-2). In 4 (80%) cases the type of delivery was caesarean section and in 1 (20%) case - vaginal delivery. For the mothers, there were the first childbirths in 2 (40%) cases, the third childbirths - in 2 (40%) and the fourth childbirth in 1 (20%) case. Hemorrhage was manifested in all newborns of group C at the first week of life. 3 and 1 (60%) patients developed Grade 2 and Grade 3 (20%) intraventricular hemorrhage, respectively; and in case of one patient, the Grade 4 (20%) intraventricular hemorrhage was diagnosed by ultrasound examination.

In group C, the first surgery was performed on average on the 55th day after birth (41-75), and the average time interval from diagnosing the hemorrhage to the first surgery was 52 days (38 - 71). No fatalities were reported. At the final neurosonoscopy: severe cystic leukomalacia was revealed in 2 (40%) patients; in addition, the single cases of Grade 1, Grade 2 and Grade 3 (20-20-20%) dilatation were observed. In group C, 2 (40%) patients developed intracranial cysts.

Table 3. Timing of hemorag developmant

Timing of the hemorrhage as detected by ultrasonography(by wks)	Group - A	Group - B	Group - C
I	82.60 %	81.81%	100%
II	8.69%	9.09%	0
III	0	0	0
IV	8.69%	9.09%	0

Table 4. Correlation between the severity of hemorrhage and the mortality

Grade of bleeding	Mortality	Number of patients
I	0	2
II	2 (9%)	22
III	4 (36%)	11
IV	1 (25%)	4
Total	7	39

Table 5. Results of treatment in each patient group

Variable	Group - A	Group - B	Group - C
Cystic periventricular leukomalacia %	56.52	81.81	40
VP Shunt rate %	73.91	72,72	100
Mortality rate %	8,69	18,18	0
Median rate of neurosurgical intervention	2.43	3.72	1.4
Range	1-7	1-11	1-2

The study of neurosurgical aspects of neonatal intraventricular hemorrhage treatment is the most comprehensive one conducted in Georgia with this patient population. It evaluated the outcomes of application of various surgical methods as well as correlation of disease formation with the factors such as gestational age, newborn birth weight and maternal gynecological history. The frequency and consequences of pre and postoperative neurosurgical complications were studied as well. The mean gestational age of newborns included in the study was 29.05 days (24-35), with average birth weight of 1366.92 grams (650-2500). The higher degree of newborn immaturity entails the higher risk of developing intraventricular hemorrhage. The mean gestational age of the neonates who developed postoperative meningitis was 29 weeks, which coincides with the available information about high risk of developing meningitis at a young gestational age, which is presumably caused by the immaturity of immune system and relative thinness of skin covering the liquor drainage device [10,11]. In terms of the maternal gynecological history, attention was drawn to the high incidence of intraventricular hemorrhage in neonates born from the first childbirth - 35.89% (second childbirth -28.20%, third childbirth 28.20%, fourth childbirth 10.25%, fifth childbirth 2.56%) although no such correlation has been established through the analysis of authoritative publications [12,13].

In all three groups, the newborn intraventricular hemorrhage was manifested in the first week of life in more than 80% of cases, which once again confirms our assumption regarding the increased risk of developing intraventricular hemorrhage within the first days of life, although there is also some probability of its development (10-15%) in the following weeks [14]. As to the hemorrhage grades, the intraventricular hemorrhages of Grades 2 and 3 predominated in all three groups (A, B, C). In terms of the number of neurosurgical interventions, the most optimum rate was identified for the group C, where the average number of neurosurgical surgeries was 1.4 (the same rates were 2.43 for the group A and 3.72 for the group B). In regard to fatalities, the best results were also identified in the group C, where no lethal outcomes were observed. The highest number of deaths was reported in the group B (18.18%), which may be due to the low mean gestational age (27.36 weeks) and low birth weight - 1058.18 grams (average weight) of the newborns of this group; the percentages of Grade 2 and Grade 3 hemorrhages were the highest for the group B (54,54%) as well. Our attention was also caught by the fact that 90.90% of neonates in the group B were born via the caesarean section, although authoritative studies have shown that caesarean section reduces the likelihood of developing severe intraventricular hemorrhage [12]. The high frequency of the above data in group B is directly related to the high rate of mortality in this group (18.18%) and the high frequency of severe brain damage such as cystic periventricular leukomalacia 63.63% (21.73% in group A and 40% in group C).

Conclusion. The newborn intraventricular hemorrhage poses a serious threat to life and further neurological development.

Complications such as meningitis, progressive ventriculomegaly and severe brain cystic leukomalacia are quite common. The mortality rate remains high as well. There is no optimum method for treating the newborn intraventricular hemorrhage, the methods examined by us are characterized by some pros and cons. Each case requires differentiated approach as well as individual selection of treatment tactics. Our optimism is particularly encouraged by the use of endoscopic method of intraventricular hemorrhage treatment which is actively being introduced in our clinic.

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SUMMARY

COMPARATIVE ANALYSIS OF NEUROSURGICAL ASPECTS OF NEONATAL INTRAVENTRICULAR HEMORRHAGE TREATMENT

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Intraventricular hemorrhage is the major cause for neonatal hydrocephalus. This study aims to provide the comparative analysis of existing methods of intraventricular hemorrhage treatment. 39 medical cases were studied retrospectively, all the patients were treated at Neonatology Department of O. Ghudushauri National Medical Center, in 2016-2020. As an initial neurosurgical intervention, 23 and 11 neonates underwent ventricular reservoir implantation (A) and ventriculostomy (B), respectively; 5 newborns received the serial ventricular/lumbar

punctures (C). Complications, eventual need for shunting, the frequency of intracranial cyst formation and the rate of complication with meningitis were studied retrospectively. The patients were divided into three groups - A, B and C. The Group A, Group B and Group C neonates slightly differed by the gestational ages. In Group A, 17 (73.91%) newborns required shunting during their stay at the clinic, and 2 of them were transferred abroad for further treatment. In group B, 8 newborns required shunting and 2 patients died. In Group C, ventriculoperitoneal shunting was applied in 100% of cases. Among 39 patients, shunting was required for 30 (76.92%) neonates, 2 out of whom were transferred abroad. 7 (17.98%) patients died. The average number of neurosurgical interventions among the deceased patients was 2 (minimum 1, maximum 5).

Complications of the neonate intraventricular hemorrhage pose a serious threat to life and further neurological development. There is no optimum method for treatment of this disease, each case requires differentiated approach and individual identification of treatment tactics.

Keywords: hydrocephalus, intraventricular hemorrhage, neonates, premature infants, neonatal complications.

РЕЗЮМЕ

СРАВНИТЕЛЬНЫЙ АНАЛИЗ НЕЙРОХИРУРГИЧЕСКИХ АСПЕКТОВ ЛЕЧЕНИЯ НЕОНАТАЛЬНОГО ВНУТРИЖЕЛУДОЧКОВОГО КРОВОТЕЧЕНИЯ

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Основной причиной развития гидроцефалии у новорожденных является внутрижелудочковое кровоизлияние.

Цель исследования - сравнительный анализ существующих методов лечения внутрижелудочкового кровоизлияния.

Ретроспективно изучено 39 случаев заболевания у детей, проходивших лечение в Национальном медицинском центре им. акад. О. Гудушаури, в отделении неонатологии, в течение 2016-2020 гг. Пациенты разделены на три группы - А, В и С. Различий в гестационном возрасте между больными групп А, В и С не наблюдалось.

В качестве первого нейрохирургического вмешательства выполнена имплантация желудочкового резервуара 23 новорожденным (группа А), 11 новорожденным выполнена вентрикулостомия (группа В), 5 новорожденным - серийные желудочковые/лумбальные пункции (группа С). Ретроспективно изучены осложнения, необходимость шунтирования, частота развития внутричерепных кист и осложнений менингитом.

В группе А ликворшунтирующая операция выполнена 17 (73,91%) новорожденным, включая 2 новорожденных, которые для дальнейшего лечения направлены за границу. В группе В шунтирование потребовалось 8 (72,7%) новорожденным, 2 пациента умерли. В группе С шунтирование проведено всем пациентам. Из 39 пациентов шунтирование потребовалось 30 (76,92%), из них двое переведены за границу. Умерли 7 (17,98%) пациентов. Среднее количество

нейрохирургических вмешательств у умерших пациентов составило 2 (минимум 1, максимум 5).

Осложнения, вызванные внутрижелудочковым кровоизлиянием у новорожденных, представляют серьезную угрозу для жизни и дальнейшего неврологического развития. Оптимального метода лечения внутрижелудочкового кровоизлияния не существует, каждый случай требует индивидуального подхода и индивидуального определения лечебной тактики.

რეზიუმე

ახალშობილთა ინტრავენტრიკულური ჰემორაგიის მკურნალობის ნეიროქირურგიული ასპექტების შედარებითი ანალიზი

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ახალშობილებში ჰიდროცეფალიის განვითარების ძირითად მიზეზს წარმოადგენს ინტრავენტრიკულური ჰემორაგია.

კვლევის მიზანს წარმოადგენს ინტრავენტრიკულური ჰემორაგიის მკურნალობის არსებული მეთოდების შედარებითი ანალიზი.

რეტროსპექტიულად შესწავლილია 39 სამედიცინო შემთხვევა, ყველა პაციენტი მკურნალობდა

აკად. ო. ღუღუშაურის ეროვნულ სამედიცინო ცენტრში, ნეონატოლოგიურ განყოფილებაში 2016-2020 წწ. პირველ ნეიროქირურგიულ ინტერვენციად 23 ახალშობილს ჩატარდა ვენტრიკულური რეზერვუარის იმპლანტაცია (ჯგუფი A), 11 ახალშობილს ვენტრიკულოსტომია (ჯგუფი B), 5 ახალშობილს - სერიული ვენტრიკულური/ლუმბალური პუნქციები (ჯგუფი C). გართულებები, შუნტირების აუცილებლობა, ინტრაცერებრული ცისტების განვითარების სისშირე და მენინგიტით გართულების მაჩვენებელი შესწავლილია რეტროსპექტიულად.

A, B და C ჯგუფებში შემავალი ახალშობილები გესტაციური ასაკით უმნიშვნელოდ გასხნავდებოდნენ ერთმანეთისაგან. A ჯგუფში კლინიკაში დაყოფნების პერიოდში შუნტირება დაჭირდა 17 (73,91%) ახალშობილს, მათგან 2 ახალშობილი შემდგომში მკურნალობისათვის გადაყვანილი იყო საზღვარგარეთ. B ჯგუფში შუნტირება ჩატარდა 8 ახალშობილს, 2 პაციენტი გარდაიცვალა. C ჯგუფში ვენტრიკულო-პერიტონეული შუნტირება გამოყენებულ იქნა 100% შემთხვევაში, ხოლო 39 პაციენტიდან - 30 (76,92%) პაციენტს, მათგან 2 გადაყვანილ იქნა საზღვარგარეთ. გარდაიცვალა 7 (17,98%) პაციენტი. გარდაცვლილ პაციენტებში ნეიროქირურგიული ჩარევების საშუალო რიცხვმა შეადგინა 2 (მინიმალური 1, მაქსიმალური 5).

ახალშობილებში ინტრავენტრიკულური ჰემორაგიის მიერ გამოწვეული გართულებები წარმოადგენს სერიოზულ საფრთხეს სიცოცხლისათვის და შემდგომი ნევროლოგიური განვითარებისათვის. აღნიშნული დაავადების მკურნალობის ოპტიმალური მეთოდი არ არსებობს, თითოეული შემთხვევა საჭიროებს ინდივიდუალურ მიდგომას, მკურნალობის ტაქტიკის ინდივიდუალურ დადგენას.

ЭФФЕКТИВНОСТЬ ЛЕЧЕНИЯ ДЕТЕЙ С РИГИДНЫМ ПЛОСКОСТОПИЕМ И ДИСФУНКЦИЕЙ СУХОЖИЛИЯ ЗАДНЕЙ БОЛЬШЕБЕРЦОВОЙ МЫШЦЫ

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Исследования последних лет свидетельствуют, что у детей диагностируют, в основном, две формы продольного плоскостопия: мобильную и ригидную [1]. Причиной возникновения ригидной стопы являются структурные изменения в мышцах, костях и суставах [2]. Ригидное уплощение продольного свода стопы снижает её демпферную функцию, что вызывает стойкий болевой синдром и снижение резистентности при физических нагрузках [3]. Ригидное продольное плоскостопие (РПП) в большинстве случаев со-

провождается дисфункцией сухожилия задней большеберцовой мышцы (ЗББМ) [4].

Дисфункция сухожилия ЗББМ – одна из причин формирования ригидной стопы с развитием болевого синдрома, дегенеративно-дистрофических изменений в костях и суставах предплюсны. Дисфункция сухожилия приводит к нарушению артикуляции, увеличению ригидности в подтаранном суставе, изменениям архитектоники стопы. Однако первоначальные причины патогенеза по сей день не изучены, отсутствуют