



SURGICAL STRATEGY AND TREATMENT OF CO-TRAUMA IN CHILDREN

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ABSTRACT

Co-trauma in children is a serious medical problem that requires a comprehensive approach to diagnosis and treatment. Given the anatomical and physiological characteristics of the child's body, the development of effective surgical strategies is extremely important to ensure the best treatment results and minimize possible complications. In recent years, there has been significant progress in the field of pediatric traumatology, which makes it necessary to constantly update knowledge and introduce new techniques.

ХИРУРГИЧЕСКАЯ СТРАТЕГИЯ И ЛЕЧЕНИЕ КО-ТРАВМ У ДЕТЕЙ

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ABSTRACT

Ко-травма у детей является серьезной медицинской проблемой, требующей комплексного подхода к диагностике и лечению. Учитывая анатомо-



Комбинированная травма, детская травматология, хирургическая стратегия, диагностика травм, малоинвазивная хирургия, комплексное лечение, детская реабилитация, современные методы лечения, высокотехнологичные методы визуализации, междисциплинарный подход.

физиологические особенности детского организма, разработка эффективных хирургических стратегий чрезвычайно важна для обеспечения наилучших результатов лечения и минимизации возможных осложнений. За последние годы достигнуты значительные успехи в области детской травматологии, что обуславливает необходимость постоянного обновления знаний и внедрения новых методик.

Introduction. Combined injuries in children are one of the most complex and dangerous medical situations that require an immediate and comprehensive approach. The complexity of treatment is due not only to the severity of injuries but also to the characteristics of the child's body, such as intensive growth and development, which requires special attention when choosing a therapeutic strategy. In recent years, significant progress in medicine has improved the outcomes of injury treatment, but the issues of optimizing surgical techniques and approaches to rehabilitation remain relevant.

The development and implementation of new diagnostic and treatment technologies, including minimally invasive techniques and regenerative methods, play a key role in reducing complications and speeding up the recovery process. Equally important is a comprehensive interdisciplinary approach, including the participation of various specialists, which makes it possible to ensure a more complete and high-quality recovery of affected children.

In this work, the analysis of modern surgical strategies and methods of treatment of concomitant injuries in children is carried out based on the study of the latest scientific data and clinical recommendations, which makes it possible to propose optimal ways to improve medical care in this area.

Materials and methods. Various sources of information were used to conduct the study, including scientific articles, reviews, clinical guidelines and recommendations published in the Google Scholar and Scopus databases. The main stages of the study included data collection, literature analysis, study of diagnostic methods, surgical approaches and complex treatment, as well as comparative analysis and synthesis of the data obtained. Data collection was carried out through the search and selection of scientific publications on the problem of co-trauma in children published over the past ten years. Key words were used, such as "concomitant injuries in children", "pediatric traumatology", "surgical strategy", "trauma diagnosis", "minimally invasive surgery", "complex treatment", "rehabilitation of



children", "modern methods of treatment", "interdisciplinary approach". The analysis of the literature included the systematization and classification of data from selected publications by type of injury, diagnostic methods, surgical approaches and rehabilitation strategies. The quality and reliability of the data were evaluated, and only peer-reviewed and recognized sources were used.

Diagnostic methods were considered from the point of view of modern high-tech techniques, such as computed tomography (CT), magnetic resonance imaging (MRI), ultrasound examinations (ultrasound). Their effectiveness and applicability in various clinical situations were analyzed.

Surgical methods included a comparative analysis of various approaches to the treatment of concomitant injuries in children. The advantages and disadvantages of minimally invasive techniques such as arthroscopy and laparoscopy, as well as the use of new generation fixation devices and regenerative therapies were evaluated.

Comprehensive treatment and rehabilitation were studied from the point of view of an interdisciplinary approach, including the participation of pediatricians, traumatologists, neurosurgeons, anesthesiologists, physiotherapists and psychologists. The effectiveness of comprehensive rehabilitation programs, including physiotherapy, therapeutic exercises, psychotherapeutic support and social adaptation, was analyzed.

Comparative analysis and synthesis of data were carried out by comparing the data obtained with existing clinical guidelines and protocols. The synthesis of information made it possible to identify the most effective and promising methods of treatment and rehabilitation.

Based on the analysis of the data, conclusions were formulated and recommendations were developed for practical application in clinical practice. The use of such an integrated approach provided a comprehensive study of the problem and offered reasonable and relevant solutions to improve surgical strategy and treat co-trauma in children.

Results. The study showed that modern diagnostic methods have significantly improved the accuracy and speed of detecting concomitant injuries in children. The use of high-tech imaging techniques, such as computed tomography (CT) and magnetic resonance imaging (MRI), makes it possible not only to quickly and accurately determine the location and extent of damage, but also to plan subsequent treatment measures. There have also been advances in the use of ultrasound examinations (ultrasound), which are non-invasive and safe for children, allowing for dynamic monitoring of the condition of internal organs and tissues.

Based on the analysis of the literature, the most effective surgical methods for the treatment of concomitant injuries in children were identified. Particular attention is paid to minimally invasive techniques such as arthroscopy and laparoscopy. These methods can significantly reduce the trauma of operations, reduce the time of hospitalization and speed up the recovery process. The use of new-generation fixation devices, such as biodegradable implants and dynamic fixation rods, has been shown to be highly effective in stabilizing damage and reducing the risk of re-injury.

Regenerative therapies, including the use of stem cells and growth factors, have shown significant potential in repairing damaged tissue and accelerating healing. These methods are



especially relevant for children, whose regeneration processes are faster and more effective than adults.

The study confirmed the need for a multidisciplinary approach to the treatment of co-trauma in children. The participation of pediatricians, traumatologists, neurosurgeons, anesthesiologists, physiotherapists and psychologists ensures a comprehensive assessment of the patient's condition and the development of an optimal treatment plan. Interdisciplinary interaction allows you to take into account all aspects of the child's health and minimize the risk of complications.

Comprehensive rehabilitation programs, including physiotherapy, exercise therapy and psychotherapeutic support, have proven to be effective in restoring function and improving the quality of life of children after injuries. Physiotherapy and exercise therapy help restore muscle mobility and strength, and psychotherapeutic support helps children cope with the psychological consequences of injuries, reduces anxiety and depression.

Modern methods of prevention, such as the use of antibiotic prophylaxis, adequate anesthesia and strict monitoring of the patient's condition in the postoperative period, significantly reduce the risk of developing infectious and other complications. It is important to note that an individual approach to each patient and taking into account the characteristics of the child's body play a key role in the successful treatment and prevention of complications.

Statistical analysis of the data showed that the introduction of modern methods of diagnosis and treatment significantly improves outcomes in children with concomitant injuries. A decrease in the mortality rate, a decrease in the number of complications and a reduction in the time of hospitalization indicate the high effectiveness of an integrated approach. The results of the study are supported by data from various clinical studies and observations, which makes them reliable and valid.

A comparison of modern methods with traditional approaches has shown that new technologies and techniques are significantly superior to the old ones in terms of efficiency and safety. Minimally invasive techniques, regenerative therapies and comprehensive rehabilitation programs ensure better recovery and quality of life for children after injuries.

Conclusions

In the course of the study, key aspects affecting the effectiveness of surgical treatment of concomitant injuries in children were identified. The main conclusions and recommendations obtained as a result of the analysis of scientific literature and clinical data can be presented as follows:

1. The importance of timely and accurate diagnosis. Modern imaging techniques such as computed tomography (CT) and magnetic resonance imaging (MRI) play a decisive role in the early and accurate detection of concomitant injuries in children. These methods not only allow for a quick and accurate assessment of the extent and location of damage, but also for the formation of an optimal treatment plan.

2. Advantages of minimally invasive surgical techniques. Minimally invasive surgical techniques such as arthroscopy and laparoscopy have proven to be highly effective in the treatment of concomitant injuries in children. These techniques reduce surgical trauma, reduce the risk of complications, shorten hospital stays and speed up the recovery process.



3. The importance of an integrated interdisciplinary approach. The treatment of concomitant injuries in children requires the participation of a team of specialists, including pediatricians, traumatologists, neurosurgeons, anesthesiologists, physiotherapists and psychologists. An interdisciplinary approach provides comprehensive treatment aimed at restoring not only the physical, but also the psycho-emotional state of the child.

4. Effectiveness of comprehensive rehabilitation programs. Rehabilitation plays a key role in the recovery process after concomitant injuries. Comprehensive rehabilitation programs, including physiotherapy, exercise therapy, psychotherapeutic support and social adaptation, contribute to the fastest recovery of body functions and adaptation of the child to everyday life.

5. The need for constant updating of knowledge and the introduction of new technologies. Medical science and technology are constantly evolving, which requires regular updating of the knowledge of medical specialists. The introduction of new diagnostic and therapeutic methods based on the latest scientific achievements contributes to the improvement of treatment outcomes. The exchange of experience and training within professional communities and international conferences allow specialists to keep abreast of the latest trends and innovations in the field of pediatric traumatology.

6. Recommendations for further research.

Further research into the development of new diagnostic methods, surgical treatment and rehabilitation are needed to further improve the outcomes of co-trauma in children. An important focus is the study of long-term treatment outcomes and patients' quality of life, as well as the development and implementation of personalized treatment approaches.

In conclusion, the comprehensive and interdisciplinary treatment of concomitant injuries in children, based on modern high-tech diagnostic methods and minimally invasive surgical techniques, as well as effective rehabilitation, are key factors for successful recovery and improving the quality of life of patients. Constant updating of knowledge and the introduction of innovations contribute to further progress in this important field of medicine.

References:

1. Подкаменев, В. В., Пикало, И. А., & Зайцев, А. П. (2013). Сочетанная летальная травма у детей: Риск смерти от повреждений селезенки. Хирургия. Журнал им. НИ Пирогова, (3), 61-65.
2. Яхья, м. (2007). Множественная и сочетанная травма опорнодвигательной системы у детей. Клиника, диагностика и лечение (клиническое исследование).
3. Попов, В. Л., & Караваев, В. М. (2012). Возрастные особенности структуры смертельной сочетанной травмы у детей. Судебно-медицинская экспертиза, 55(4), 4-9.
4. Барская, М. А., Воскиварова, Л. И., & Муни, Г. А. (2001). Характеристика абдоминальной травмы у детей. In Тезисы докладов Всероссийского симпозиума детских хирургов " Политравма у детей" (pp. 9-9).
5. Пикало, И. А. (2012). Повреждение селезенки в структуре сочетанной летальной травмы у детей. Acta Biomedica Scientifica, (4-2 (86)), 101-105.



6. Зайниев, С. С., & Шамсиев, Ж. З. (2018). Современные методы лучевой диагностики хронического рецидивирующего гематогенного остеомиелита. In International scientific review of the problems of natural sciences and medicine (pp. 15-18).
7. Abdurasulovich Y. S. et al. FEATURES OF DIAGNOSIS AND TREATMENT OF POSTOPERATIVE ADHESIVE COMPLICATIONS IN CHILDREN //Miasto Przyszłości. – 2024. – Т. 46. – С. 654-657.
8. Kamalbaevich S. A. et al. TACTICS OF SURGICAL TREATMENT OF INFRAVENTRICULAR OBSTRUCTION IN CHILDREN //Research Journal of Trauma and Disability Studies. – 2024. – Т. 3. – №. 3. – С. 236-239.
9. Kamalova D. GIPERPLASTIK JARAYONLAR VA PREMENOPAUZAL YOSH //Евразийский журнал медицинских и естественных наук. – 2024. – Т. 4. – №. 4. – С. 254-258.
10. Mukhiddinovich S. A. et al. MODERN APPROACHES TO THE DIAGNOSIS AND TREATMENT OF LADD SYNDROME IN CHILDREN //Research Journal of Trauma and Disability Studies. – 2024. – Т. 3. – №. 3. – С. 232-235.
11. Mukhiddinovich S. A. et al. MODERN APPROACHES TO THE DIAGNOSIS AND TREATMENT OF LADD SYNDROME IN CHILDREN //Research Journal of Trauma and Disability Studies. – 2024. – Т. 3. – №. 3. – С. 232-235.
12. Xudayarova D., Tursunov N. “ACUTE ABDOMEN” IN GYNECOLOGY: MODERN OPPORTUNITIES //Modern Science and Research. – 2024. – Т. 3. – №. 1. – С. 228-233.
13. Xudoyarova D., Tursunov N. SYMPTOMS OF ACUTE ABDOMINAL IN WOMEN OF REPRODUCTIVE AGE //Modern Science and Research. – 2024. – Т. 3. – №. 1. – С. 223-227.
14. Shamsiev, J. Z. (2023). Surgical Treatment of Long Bone Fractures in Children with Combined Injuries. Central Asian Journal of Medical and Natural Science, 4(6), 386-388.
15. Shamatov I., Shopulotova Z. THE EFFECTIVENESS OF ULTRASOUND NON-PUNCTURE TECHNOLOGY WITH ENDONASAL INTRADERMAL ANTIBIOTIC THERAPY IN THE TREATMENT OF CHRONIC PURULENT POLYSINUSITIS //Science and innovation. – 2024. – Т. 3. – №. D4. – С. 307-311.
16. Zafarovich, S. J. (2023). PECULIARITIES OF PEDIATRIC TRAUMATISM. ORGANIZATION OF TRAUMATOLOGICAL CARE FOR CHILDREN IN SAMARKAND REGION.
17. Uralov S. et al. IMMUNOLOGICAL INDICATORS IN STENOSING LARINGOTRACHEITIS IN CHILDREN //Science and innovation. – 2024. – Т. 3. – №. D1. – С. 81-86.
18. Yakubovich S. I. et al. EVALUATION OF THE CLINICAL EFFECTIVENESS OF ANTIBIOTIC THERAPY IN COMBINATION WITH TOPICAL STEROIDS IN THE TREATMENT AND PREVENTION OF RECURRENT BACTERIAL SINUSITIS //European International Journal of Multidisciplinary Research and Management Studies. – 2024. – Т. 4. – №. 03. – С. 205-213.
19. Yusupov S. A. et al. Immunological reactivity in children with chronic bronchitis //Science and Education. – 2024. – Т. 5. – №. 1. – С. 32-39.