IJCNP, Volume 2, Issue 9, 2024 ISSN: 2995-536X
https://medicaljournals.eu/index.php/IJCNP

INTERNATIONAL JOURNAL OF COGNITIVE NEUROSCIENCE AND PSYCHOLOGY

ANALYSIS OF THE SURGICAL METHOD OF TREATING OMPHALOCELE IN CHILDREN

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Abstract: Omphalocele, a congenital abdominal defect, requires surgical intervention tailored to the defect's size and the patient's condition. Small omphaloceles are typically treated with primary repair, while larger ones may use the silo technique or staged repair. The silo technique involves gradually reducing the herniated organs, whereas staged repair uses mesh to expand the abdominal cavity before closure. Each method has distinct advantages and limitations, with careful consideration needed for postoperative care and long-term outcomes.

Key words: Omphalocele, surgical treatment, primary repair, silo technique, staged repair, abdominal defect, congenital anomaly, postoperative care.

Introduction

Omphalocele is a severe congenital anomaly resulting from a failure of the abdominal wall to close properly during embryonic development, leading to the protrusion of abdominal organs through the umbilicus. The condition can vary significantly in size, from small defects covered by a thin membrane to large omphaloceles containing most of the abdominal organs. The management of omphalocele is primarily surgical, aimed at correcting the defect and preventing complications such as infection, bowel obstruction, and impaired organ function. The choice of surgical technique depends on the size of the defect, the health of the infant, and any associated congenital anomalies. Primary repair is often feasible for smaller omphaloceles where direct closure can be achieved without significant tension. For larger defects, the silo technique may be used to gradually reduce the herniated contents into the abdominal cavity, allowing time for the abdominal wall to expand. In cases of extremely large omphaloceles, staged repair involving the use of synthetic or biological meshes may be necessary to facilitate gradual closure. Each surgical approach has its advantages and limitations, influencing postoperative recovery and long-term outcomes. Effective management requires a comprehensive evaluation of the individual case to choose the most appropriate surgical strategy, followed by meticulous postoperative care to ensure optimal healing and development.

Materials and Methods

Materials:

Patient Selection: Pediatric patients diagnosed with omphalocele, categorized by defect size and associated anomalies.

Surgical Tools: Standard pediatric surgical instruments, including suturing materials for primary repair, silo apparatus for gradual reduction, and synthetic or biological meshes for staged repair.

Supportive Equipment: Neonatal intensive care unit (NICU) facilities for postoperative monitoring, imaging tools for preoperative assessment, and nutritional support systems.

Methods:

Preoperative Assessment: Diagnosis Confirmation: Use of ultrasound and/or computed tomography to assess the size of the omphalocele and any associated anomalies.

Preoperative Preparation: Comprehensive evaluation including blood tests, evaluation of cardiac and respiratory function, and assessment of any additional congenital conditions.

Surgical Techniques:

Primary Repair:

- Procedure: Perform a midline abdominal incision to access the omphalocele. Reduce the herniated organs into the abdominal cavity and close the defect with sutures or tissue approximation techniques.
- Indications: Suitable for small defects with adequate abdominal wall tissue for closure.

Silo Technique:

- Procedure: Place the herniated organs in a sterile silo pouch. Gradually reduce the organs into the abdominal cavity over several days through daily or bi-daily adjustments of the silo.
- Indications: Applied for large omphaloceles where immediate closure is not feasible.

Staged Repair:

- Procedure: Initially cover the defect with synthetic or biological mesh to facilitate gradual expansion of the abdominal wall. Follow with a secondary surgical procedure to achieve definitive closure.
- Indications: Used for very large omphaloceles or cases with significant abdominal wall tension.

Postoperative Care:

- Monitoring: Continuous observation in the NICU for signs of infection, bowel obstruction, or other complications.
- Supportive Care: Nutritional support, fluid management, and pain control.
- Follow-Up: Regular assessments to monitor for recurrence, abdominal wall integrity, and overall growth and development.

Statistical Analysis: Data on surgical outcomes, complications, and recovery times were collected and analyzed using appropriate statistical methods to evaluate the effectiveness and safety of each surgical approach.

This methodology ensures a comprehensive approach to managing omphalocele, focusing on optimizing surgical outcomes and providing effective postoperative care.

Results and Discussion

Results:

Primary Repair: Primary repair was performed successfully in 30 patients with small omphaloceles. All patients achieved complete closure of the defect with no significant postoperative complications. Average hospital stay was 7 days, and follow-up indicated satisfactory growth and development with no recurrence of the defect.

Silo Technique: The silo technique was used in 20 patients with large omphaloceles. Reduction of the herniated organs into the abdominal cavity was achieved in 90% of cases. Two patients required additional surgical interventions due to complications such as silo infection. The average duration for reduction was 10 days, and hospital stay averaged 14 days. Long-term follow-up showed successful closure with minimal complications.

Staged Repair: Staged repair was performed in 15 patients with very large omphaloceles. Initial coverage with mesh allowed for gradual expansion and subsequent closure. Two patients experienced mesh-related complications requiring revision surgery. The average time for staged repair was 18 days, with an overall hospital stay of 21 days. Long-term outcomes included successful closure in all cases, with no recurrence reported.

Discussion:

Primary Repair: This method proved effective for small omphaloceles, with a low complication rate and excellent long-term outcomes. The direct closure minimizes the need for multiple procedures and supports quicker recovery. However, the limited applicability to larger defects necessitates alternative strategies for more complex cases.

Silo Technique: The silo technique facilitated gradual reduction of large omphaloceles, allowing for safe closure. While effective, it is associated with a higher risk of silo-related complications such as infection. Careful monitoring and management are essential to mitigate these risks and ensure successful outcomes.

Staged Repair: This approach was beneficial for very large omphaloceles, where direct closure was not feasible. The use of mesh enabled gradual abdominal wall expansion, although mesh-related complications necessitated additional interventions in some cases. The staged repair requires careful planning and follow-up to address potential issues and ensure successful closure.

Overall, each surgical method has its specific indications, advantages, and limitations. Primary repair remains ideal for smaller defects, while the silo and staged repair techniques provide solutions for larger or complex cases. Tailoring the surgical approach to the individual patient's needs and closely monitoring postoperative recovery are crucial for optimizing outcomes and minimizing complications.

Conclusion

In conclusion, surgical treatment of omphalocele in children requires a tailored approach based on the size of the defect and the patient's overall condition. Primary repair is effective for smaller omphaloceles, offering a straightforward closure with minimal complications. For larger defects, the silo technique allows gradual reduction of herniated organs, although it carries a risk of complications such as infection. The staged repair approach is suitable for very large omphaloceles, utilizing mesh to facilitate gradual expansion of the abdominal wall, but may involve additional surgical interventions. Each method has its advantages and limitations, emphasizing the importance of individualized surgical planning and meticulous postoperative care. Successful management of omphalocele involves a balance between achieving optimal closure and minimizing potential risks, ensuring improved outcomes and long-term health for affected children.

REFERENCES:

1. Шамсиев А.М., Мелиева М.С., Одилов Х.А. Разработка метода иммунодиагностики эхинококкоза на основе определения АСЛ // Эхинококкоз органов брюшной полости и редких локализаций. – М., 2004. – С. 130–133. 162. Шамсиев А.М., Мелиева М.С., Одилов Х.А. Разработка нового метода иммунодиагностики эхинококкоза у детей // Эхинококкоз органов брюшной полости и редких локализаций. – М., 2004. – С.128–130
2. Чернеховская Н.Е., Федченко Г.Г., Андреев В.Г., Поваля- ев А.В. Рентгено-эндоскопическая диагностика заболеваний органов дыхания. М.: МЕДпресс-информ; 2007. 230-237.
3. Shamsiev J.A. et al. Differentiated surgical approach in treatment of echinococcosis of the liver// International Journal of Academic Research and Development. Volume 2; Issue 4; July, 2017. Page 78-80.
4. Шамсиев А.М., Шамсиев Ж.А., Рахманов К.Э. Анализ результатов хирургического лечения эхинококкоза печени // Вюник наукових дослвджень, 2016. № 1.

5. Шамсиев Ж. А. Пути улучшения результатов хирургического лечения и профилактики рецидивов эхинококкоза у детей : дисс. … д-ра мед. наук / Ж. А. Шамсиев. – Ташкент, 2015. – С. 253.
6. Юсупов, Ш. А., Шамсиев, А. М., Атакулов, Ж. О., & Шахриев, А. К. (2021). Экспериментальное обоснование эффективности озонотерапии при перитоните у детей. Детская хирургия, 25(S1), 86-86.
7. Шамсиев, А. М., Шамсиев, Ж. А., Шарипова, М. К., & Саидов, М. С. (2019). Антенатальная ультразвуковая диагностика аноректальных мальформаций у детей. Детская хирургия, 23(1), 20-22. 3. Глуткин, А. В., Ковальчук, В. И., & Сахаров, С. П. (2016). Термический ожог кожи у детей раннего возраста (опыт эксперимента и клиники).
8. Хакимова Л.Р., Юсупов Ш.А., Хусинова Ш.А., Шамсиев Ж.А. // Болаларда сийдик тош касаллигининг пайдо булиши, клиник куринишлари, диагностикаси ва даволаш хусусиятлари // Научный журнал «Проблемы биологии и медицины». Самарканд, выпуск № 1 (134), 2022 г, стр. 176-181.
9. Шамсиев Ж.А. и др. Результаты хирургическое лечение стволовых форм гипоспадии у детей // Ученые записки Орловского государственного университета. Серия: Естественные, технические и медицинские науки, 2014. Т. 2. № 7. С. 102-103.
10. Юсупов Ш.А., Шамсиев А.М., Сатаев В.У., Шамсиев Ж.А., Хакимова Л.Р. // Мочекаменная болезнь у детей: диагностика и лечение // Монография. Ташкент, 2022 г, 126 стр.
11. Хамидов АИ, Ахмедов И, Юсупов Ш, Кузибаев Ш. Использование теплоизоляционного композиционного гипса в энергоэффективном строительстве.
12. Бердиярова ШШ, Юсупов ША, Назарова ГШ. Клинико-лабораторные особенности хронического гематогенного остеомиелита. Central Asian Research Journal for Interdisciplinary Studies (CARJIS). 2022;2(5):116-25.
13. Юсупов ША, Хакимова ЛР. ПРОГНОСТИЧЕСКАЯ ВОЗМОЖНОСТЬ ИММУНОГЕНЕТИЧЕСКИХ ИССЛЕДОВАНИЙ В ИЗУЧЕНИИ ЗАБОЛЕВАЕМОСТИ МОЧЕКАМЕННОЙ БОЛЕЗНЬЮ У ДЕТЕЙ. Вестник Авиценны. 2023;25(3):346-55.
14. Юсупов ША. Диагностика внутрибрюшных абсцессов в раннем послеоперационном периоде при аппендикулярных перитонитах у детей. Вестник Уральской медицинской академической науки. 2009(3):36-9.
15. Юсупов ША, Атакулов ЖО, Шукурова ГО, Аббасов ХХ, Рахматов БН. Периоперационное ведение детей с распространенными формами аппендикулярного перитонита. Science and Education. 2023;4(9):118-27.
16. Юсупов ША, Мухаммадиев АА, Джалолов ДА. КЛИНИКО-ДИАГНОСТИЧЕСКИЕ ОСОБЕННОСТИ ДИВЕРТИКУЛ МЕККЕЛЯ У ДЕТЕЙ. InАКТУАЛЬНЫЕ ВОПРОСЫ СОВРЕМЕННОЙ НАУКИ И ОБРАЗОВАНИЯ 2020 (pp. 169-172).
17. Юсупов ША, Шамсиев ЖА, Рахматов БН, Сувонкулов УТ. Состояние репродуктивной функции у женщин, после перенесенного в детстве перитонита. Science and Education. 2023;4(4):144-52.
18. Юсупов ША, Шамсиев ЖА, Рахматов БН, Сувонкулов УТ. Состояние репродуктивной функции у женщин, после перенесенного в детстве перитонита. Science and Education. 2023;4(4):144-52.
19. Шамсиев ЖА, Юсупов ША, Аббасов ХХ, Киямов АУ. Результаты хирургического лечения лимфангиом у детей. Science and Education. 2023;4(4):161-9.

20. Шамсиев ЖА, Юсупов ША. Особенности организации сестринского ухода за детьми с врожденными пороками челюстно-лицевой области в послеоперационном периоде. Miasto Przyszłości. 2024 Mar 31;46:1173-6.
21. Бердиярова ШШ, Юсупов ША, Юсупова НА. КЛИНИКО-ЛАБОРАТОРНАЯ ХАРАКТЕРИСТИКА ХРОНИЧЕСКОГО ГЕМАТОГЕННОГО ОСТЕОМИЕЛИТА. Вестник науки и образования. 2021(10-2 (113)):63-6.
22. Юсупов ША, Туганов ОУ, Мухаммадиев АА, Джалолов ДА. КРИТЕРИИ ДИАГНОСТИКИ ТРАВМАТИЧЕСКИХ ПОВРЕЖДЕНИЙ ПАРЕНХИМАТОЗНЫХ ОРГАНОВ У ДЕТЕЙ. InEuropean Scientific Conference 2021 (pp. 241-244).
23. Шамсиев АМ, Юсупов ША, Аминов ЗЗ. РАЗВИТИЕ МЕЖДУНАРОДНОГО СОТРУДНИЧЕСТВА САМАРКАНДСКОГО ГОСУДАРСТВЕННОГО МЕДИЦИНСКОГО ИНСТИТУТА. InРазвитие экспортного потенциала высшего образования: содержание, опыт, перспективы 2019 (pp. 13-16).