


Saving lives: First aid for airway clearance

 <https://doi.org/10.56238/sevened2024.012-054>

Amanda Arantes Maia¹, Emilly Cerqueira Feliciano Reis², Gabriella Parreira Souza Lima³, Isabella Moulin Lima de Freitas Gomes⁴, Luisa Yara Bahia Viana⁵, Maria Clara Lopes Alves Teixeira Rocha⁶, Ana Clara das Virgens Arruda⁷, Julia Ragone Vieira⁸, Hana Paula Brasil Reis⁹, Nathalie Silveira Placides¹⁰, Wagner Pablo Corrêa¹¹ and Juscélio Clemente de Abreu¹²

ABSTRACT

The social relevance of disseminating knowledge about first aid for airway clearance among monitors and assistants of daycare centers and preschools, play a crucial role in emergency situations for early childhood education. It is notorious that children from daycare centers (under 3 years old) and preschool children (4 to 5 years old) are constantly exposed to choking risks, being one of the main causes of accidental death in these age groups, which can be avoided with adequate knowledge about the management of foreign body airway obstruction (OVACE) and proper application of first aid maneuvers (PS). Thus, training educators and managers of daycare centers and schools is extremely important to minimize accidents and the risks of complications resulting from choking. The dissemination of this information to family members and guardians is also essential, as they are the first to act in many emergency situations. A well-informed and prepared school community can act quickly in the event of a serious incident, thus increasing the chances of saving many victims.

Keywords: First aid, Airway obstruction by foreign bodies, Early childhood education.

LIST OF ABBREVIATIONS

Foreign Body Aspiration (FBA)

Foreign body (FB)

Manobra de Heimlich (MH)

Foreign body airway obstruction (OVACE)

¹ Graduating in Medicine

University Center of Caratinga - UNEC

² Graduating in Medicine

University Center of Caratinga - UNEC

³ Graduating in Medicine

University Center of Caratinga - UNEC

⁴ Graduating in Medicine

University Center of Caratinga - UNEC

⁵ Graduating in Medicine

University Center of Caratinga - UNEC

⁶ Graduating in Medicine

University Center of Caratinga - UNEC

⁷ Graduating in Medicine

University Center of Caratinga - UNEC

⁸ Graduating in Medicine

University Center of Caratinga - UNEC

⁹ Graduating in Medicine

University Center of Caratinga - UNEC

¹⁰ Graduating in Medicine

University Center of Caratinga - UNEC

¹¹ Prof. Master of Science Applied to Cancer

University Center of Caratinga - UNEC

¹² Prof. Dr. in Cytogenetics

University Center of Caratinga - UNEC



First Aid (FA)



INTRODUCTION

Children in kindergarten, daycare centers and preschools are subject to various situations that can pose risks to their health and well-being.

The ability to act immediately and effectively in situations of a child's partial or complete airway obstruction by means of an object or food can be potentially life-threatening.

Training monitors and assistants of daycare centers and preschools, with basic knowledge of HCWs to carry out the proper management of OVACE, can prepare them to intervene in critical situations of threat to death.

In Brazil, according to data from the Ministry of Health, in 2023, approximately 2,000 people choked to death, including 319 children, aged 0 to 4 years, either due to laryngeal obstruction, during non-closure of the respiratory system during feeding, or due to blockage of the air passage, by a foreign body (FB), which can cause asphyxiation and death.

By sharing knowledge and experiences related to OVACE, it seeks to train individuals who work in daycare centers and preschools, exploring techniques and procedures, in addition to fostering humanitarian values inherent to the act of saving lives, impacting the perception they have of themselves and their role in society.

DEVELOPMENT

EARLY CHILDHOOD EDUCATION

Early childhood education in Brazil is a child's right, and the state is obliged to provide adequate spaces and professionals to serve them correctly. Also known as early childhood education, it is the first stage of basic education, with the objective of serving children from zero to five years of age, from whom they will have their first contacts with school, integrating teaching and care strategies, working as a complement to family education.

In Brazil, the Law of Guidelines and Bases defines a daycare center as an institution intended for the care of children from 0 to 3 years old, full-time, and pre-school, which serves the age group from 4 to 5 years and 11 months, on a part-time basis.

In the school environment of early childhood education, there may be children of different ages and cognitive phases, generating an environment conducive to accidents. Therefore, it is essential that students and the entire pedagogical team are trained to attend to HCs.

Early childhood education schools should provide a structured environment in which children can learn to interact, share, collaborate and relate to their peers and teachers, thus promoting the development of essential social and emotional skills, such as empathy, cooperation, self-control, conflict resolution, in addition to ensuring their integral health. However, in Brazil, there is still much to be done, especially in relation to the preparation of educators for the realization of the SP.



For health education, it is essential to master the theme, concepts and scopes, associated with communication and qualified listening. Considering the importance of the educational dimension for the expansion of critical knowledge, it is necessary to intensify the relevance of concepts and approaches, and thus encourage training. This action helps in personal and social growth, bringing autonomy and emancipation to the individual in the face of extreme situations and contributing to the development of individual and collective health (SALCI, et al., 2013; PEREIRA, MESQUITA and GARBUIO, 2020).

AIRWAY OBSTRUCTION BY FOREIGN BODIES (OVACE)

OVACE is any situation that partially or totally prevents the passage of air through the airways, as a consequence of a foreign body aspiration (FBA), hindering effective pulmonary gas exchange, and can be described as the third leading cause of death in children in the school environment in Brazil, because they do not receive adequate SP (MORAIS, et al, 2022). Accidents related to ECA can result in asphyxia and hypoxia (low oxygen saturation in the tissues) and can lead to cardiorespiratory arrest (PEREIRA, MESQUITA and GARBUIO, 2020).

ECA can occur through small objects or food, causing an interruption of breathing, which without early management can present definitive and potentially fatal sequelae (GONÇALVES, CARDOSO, RODRIGUES, 2011).

Due to the immaturity of laryngeal closure reflexes and swallowing food, bronchoaspiration can occur in children under 4 years of age. Thus, the appropriate knowledge of education professionals in relation to the clearance of airways is important due to the greater chances of witnessing choking situations (JONGE, 2020).

According to Souza et al. (2019), the recognition of signs of obstruction and the effective delivery of PSs have potentially preventive value in relation to fatal outcomes, and schools are considered strategic spaces for addressing techniques and management related not only to OVACE, but also to basic life support.

According to statistics from the National Security Council on OVACE, it is the fourth leading cause of unintentional death, making it one of the leading causes of accidental deaths in children under 16 years of age (SVÍZZERO, et al., 2023). Considering the prevalence of this emergency and the potential risks of death, all people, including those outside the health care field, should have a basic understanding of how to provide HCPs in this scenario (DODSON and COOK, 2023).



KNOWLEDGE ABOUT THE MANAGEMENT OF OVACE FOR EARLY CHILDHOOD EDUCATION

In the case of AVE and depending on the degree of airway obstruction, the individual who will perform the SP must act quickly in order to ensure adequate assistance to the victim, considering that in this scenario, if airway clearance is not achieved within a short period of time, The victim may progress to cardiorespiratory arrest, as well as brain activities may cease, causing irreversible brain damage and death due to lack of oxygen.

In cases of partial airway obstruction, that is, some air still passes to the victim's lungs, emitting sound, in children over 2 years of age, try to calm them down and instruct them to cough in an attempt to expel FB. If the obstruction persists, observing that the child is unable to make any breathing sound or voice, it has evolved to a total obstruction of the airway, therefore, request the emergency service (SAMU – 192 or Fire Department – 193) while performing the Heimlich maneuver (MH) for choking in patients who are still conscious, positioning themselves kneeling behind the victim, encircling around the abdomen with the arms, at the level of the iliac crest. Clench one of the fists and place it between the navel and the xiphoid appendix, and the other flat on the first hand, performing quick and firm inward and upward compressions, creating a moving pressure in the shape of a "J", until the victim expels the FB.

In children older than 2 years with total OVACE in an unconscious victim, the victim should be supported to the ground and chest compression maneuvers should be initiated. After 30 compressions, open the child's mouth and observe if there is a visible foreign body, and if the rescuer manages to pinch this foreign body with his fingers, it must be removed. If it is not possible to see and there is a device for ventilation, two ventilations should be performed and chest compression maneuvers should be performed. In the absence of the device, perform only chest compressions. In cases where the foreign body is removed, the child should be supported with the body lateralized until help arrives. If the victim progresses to cardiorespiratory arrest, 30 compressions and two ventilations should be performed when the device is available, and if there is not, only compressions should be performed until specialized help arrives.

In children under 2 years of age in the face of airway obstruction, MH is not recommended due to the significant risk of injury, so the OVACE maneuver consists of kneeling with one leg at 90°, supporting the child on the forearm with the head facing down, keeping it lower than the body. Perform 5 firm percussions in the back area, between the shoulder blades, followed by 5 chest compressions with both fingers, in the center of the chest, below the nipple line, until the FB is expelled or the patient becomes responsive. When it is not responsive, the CPR (Cardiopulmonary Resuscitation) protocol should be initiated, performing 30 compressions with two fingers below the nipple line, dosing the applied force and with only 4 cm of depth, pressing the chest for 2 continuous



minutes. During the maneuver, the child's brachial and carotid pulses should be checked every 2 minutes. It is essential that from the beginning of CPR, the emergency service (SAMU) is activated. (LIMA, et al., 2018).

FINAL CONSIDERATIONS

By expanding knowledge about airway clearance S, classroom monitors and assistants can save numerous lives, especially victims of airway obstruction events, by disseminating knowledge about the management of choking.

It is necessary to be able to identify the signs and symptoms associated with the problem, as well as a quick and efficient intervention.

Guidance on how to activate emergency services is essential, promoting an effective response in serious cases, so that they do not evolve into life-threatening situations.



REFERENCES

1. Brasil. Ministério da Saúde. Biblioteca Virtual em Saúde. Engasgo. Brasília, 2017. Disponível em: <<http://bvsmis.saude.gov.br/dicas-em-saude/2513-engasgo>>. Acesso em 12 junho de 2024.
2. Costa, I. O., et al. (s.d.). Estudo descritivo de óbitos por engasgo em crianças no Brasil. *Rev Pediatría- SOPERJ*. Disponível em: http://revistadepediatriasoperj.org.br/detalhe_artigo.asp?id=1166. Acesso em: 15 maio 2024.
3. Dodson, H., & Cook, J. (2023). Foreign body airway obstruction. In: *Stat Pearls*. Treasure Island (FL): Stat Pearls Publishing.
4. Gonçalves, M. E. P., Cardoso, S. R., & Rodrigues, A. J. (s.d.). Corpo estranho em via aérea. Disponível em: 10.pdf (soperj.com.br). Acesso em: 16 maio 2024.
5. Jonge, A. L., et al. (s.d.). Conhecimentos de profissionais de educação infantil sobre obstrução de vias aéreas por corpo estranho. *Enfermagem em foco*. Disponível em: Conhecimentos de profissionais de educação infantil sobre obstrução de vias aéreas por corpo estranho | de Jonge | Enfermagem em Foco (cofen.gov.br) . Acesso em: 16 maio 2024.
6. Lima, L. S., et al. (s.d.). Conhecimento dos profissionais de educação infantil sobre a obstrução de vias aéreas por corpo estranho (OVACE) em crianças: uma revisão integrativa. *Revista JRG de Estudos Acadêmicos*. Disponível em: Vista do Conhecimento dos profissionais de educação infantil sobre a obstrução de vias aéreas por corpo estranho (OVACE) em crianças: uma revisão integrativa (revistajrg.com). Acesso em: 15 maio 2024.
7. Lima, et al. (2018). *Educação em saúde: Multiplicando Informações em Suporte Básico de Vida*. Projeto integrador do Curso Técnico de Enfermagem do Instituto Federal de Santa Catarina- Campus Joinville/SC. Disponível em: <https://joinville.ifsc.edu.br/~bibliotecajoi/arquivos/pi/enfermagem2018/200688.pdf>. Acesso em: 18 junho 24.
8. Mantoani, T. (s.d.). Aumento no número de mortes por engasgo alerta a importância de treinamento para todos. *Atlas Educacional*. Disponível em: AUMENTO NO NÚMERO DE MORTES POR ENGASGO ALERTA A IMPORTÂNCIA DE TREINAMENTO PARA TODOS (atlaseducacional.com). Acesso em: 15 maio 2024.
9. Ministério da Saúde. (s.d.). Cartilha de Primeiros Socorros. Disponível em: <https://www.gov.br/saude/pt-br/assuntos/saude-da-crianca/cartilha-de-primeiros-socorros>. Acesso em: 22 maio 2024.
10. Miranda Junior, U. J. P. de, Araújo, G. de O., & Pereira, C. M. (2018). *Manual de primeiros socorros para leigos*. Brasília: Do autor. Disponível em: <https://pt.scribd.com/document/438718104/Manual-de-Primeiros-Socorros-Para-Leigos-2018-final-pdf>. Acesso em 18 junho 24.
11. Morais, H. C. C., et al. (s.d.). Conhecimento de professores do nível pré-escolar sobre desobstrução de vias aéreas por corpo estranho. Disponível em: Vista do Conhecimento de professores do nível pré-escolar sobre desobstrução de vias aéreas por corpo estranho (ufes.br). Acesso em: 24 maio 2024.
12. Pereira, J. P., Mesquita, D. D., & Garbuio, D. C. (2020). Educação em saúde: efetividade de uma capacitação para equipe do ensino infantil sobre a obstrução de vias aéreas por corpo estranho.



Revista Brasileira Multidisciplinar, 23(2Supl.), 17-25. DOI: 10.25061/2527-2675/ReBraM/2020.v23i2Supl.828. Disponível em: <https://revistarebram.com/index.php/revistauniara/article/view/828>. Acesso em: 12 jun. 2024.

13. Pires, A. H. (2019). *Primeiros Socorros: Atendimento Pré-Hospitalar* (8a ed.). Rio de Janeiro: Guanabara Koogan.
14. Salci, M. A., et al. (2013). Educação em saúde e suas perspectivas teóricas: algumas reflexões. *Texto Contexto - Enfermagem, 22*(1), 224-230. Disponível em: . Acesso em 12 de junho 2024.
15. Santos, R. J. (2017). Avaliação do conhecimento de primeiros socorros entre professores da rede pública de ensino. (Dissertação de Mestrado, Faculdade de Educação, Universidade Federal de Minas Gerais). Disponível em: <https://repositorio.ufmg.br/handle/1843/BUOS-AXCKKR>. Acesso em: 22 maio 2024.
16. Santos, V. S. (s.d.). Engasgo. *Mundo Educação*. Disponível em: <https://mundoeducacao.uol.com.br/curiosidades/engasgo.htm>. Acesso em: 22 maio 2024.
17. Svízzero Amaral, M., Fonseca Drumond, R., Cuzzullin, J. P., & Diená Pastorini Jurgilas, M. (2023). Primeiros socorros diante de situações de obstrução de vias aéreas por corpo estranho (OVACE) em crianças – relato de experiência e análise da efetividade da intervenção. *Revista Conexão, 19*(1).
18. Souza, C. C., Caldeira, C. R., Pereira, A. A., Bruinsma, A. L., Melo, E. A. S., Dutra, G. B., & Botelho Filho, C. A. (2019). Ensino de Suporte Básico de Vida em escolares do município de Paulo Afonso-BA. In: *Semana de Ensino, Pesquisa e Extensão da UNIVASF, 12.* Juazeiro. Anais [...]. Juazeiro, BA: UNIVASF.