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MANAGEMENT OF AIRWAY OBSTRUCTION BY FOREIGN BODIES IN CHILDREN AND ADULTS ACCORDING TO THE 2025 AHA GUIDELINES

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Introduction

Foreign body airway obstruction (FBAO) is defined as the partial or total blockage of airflow in the larynx or trachea by an object, constituting a health emergency that can lead to serious negative repercussions, such as irreversible neurological sequelae or death. Rapid recognition of choking and early treatment are essential to mitigate possible complications.

In Brazil, according to data from the Department of Informatics of the Unified Health System (DATASUS), airway obstruction by foreign bodies is one of the leading external causes of infant mortality. In the adult population, a progressive increase in incidence can be observed with advancing age. Corroborating this information, in 2018 the National Safety Council identified choking as the third leading cause of unintentional death in the United States.

Given this, updates on the management of OVACE, following the recent protocols of the American Heart Association (AHA 2025), are necessary for the proper preparation of both health professionals and the lay population in order to avoid negative and serious health effects.

Objectives

This study aims to demonstrate updates in the management of OVACE in adults and children, according to AHA 2025 protocols. The work aims to disseminate new knowledge to healthcare professionals through a technical analysis of airway clearance maneuvers and early recognition of choking, which implies a reduction in possible neurological damage. In addition, the rapid execution of specific interventions for each age group ensures mechanical airway clearance and immediate restoration of spontaneous ventilation due to the effective expulsion of the foreign body. That said, the systematization of these procedures results in the improvement of basic life support and patient safety, ensuring incisive and effective approaches in urgent and emergency situations.

Methods

This is a descriptive review of studies that evaluated the 2025 AHA guidelines, focusing on the management of airway obstructions by foreign bodies in adults and children. The project began with a search for articles published in the last 10 years in the PubMed, Scielo, and Google Scholar databases, using the keywords "Airway Obstruction," "American Heart Association," and "Choking." Five articles in Portuguese and English were selected, published in journals available on the platform.

Results

OVACE is a complication that can occur in any patient profile, but according to the study "The effects of bystander interventions for foreign body airway obstruction on survival and neurological outcomes: Findings of the MOCHI registry," there is a higher prevalence in men and people with at least one comorbidity (dementia being the most common, followed by cerebrovascular accidents). It was concluded that the main etiology was food and the location where it occurred was in their homes, followed by wards and care institutions. In addition, it was noted that the anatomical location was MOCHI type I (oral cavity, pharynx, or larynx) and then MOCHI type II (trachea above the carina or main bronchi).

Furthermore, a data survey conducted by the study "Evaluation of basic life support interventions for foreign body airway obstructions: A population-based cohort study" showed that of 709 cases of OVACE requiring intervention, 66 had their first intervention performed by paramedics, while 643 had their first intervention performed by people who were at the scene. Of the total cases in which the first intervention was performed by bystanders, 81 (12.5%) died before hospital discharge, while of those who had their first intervention performed by paramedics, 15 (22.7%) died. Thus, it is important to teach the lay population the appropriate techniques and how to act in cases of OVACE, because the faster and more effective the first interventions are, the greater the chances of patient survival.

For adults, the main procedure is the Heimlich maneuver, which consists of rapid and repeated abdominal compressions in the epigastric region, above the navel and below the sternum, until the obstruction is cleared.

For infants, according to the 2025 AHA updates, 5 back blows followed by 5 chest compressions are recommended. If there is no improvement, repeat the cycle until the object is expelled or until unconsciousness is reached. Abdominal compression is no longer recommended due to the risk of injury to abdominal organs. Regarding technique, the heel of the hand or 2 thumbs-hands surrounding the chest are used. Using 2 fingers is no longer recommended. This technique is similar to cardiopulmonary resuscitation (CPR), but the difference is that in OVACE, the goal is to clear the airways and not to promote blood flow to the brain.

For preschoolers, school-age children, and adolescents, we use the same technique as for adults, but with less force and intensity due to the risk of rib fractures.

Discussion

This narrative review aimed to consolidate the current evidence on the management of foreign body airway obstruction (FBAO) in children and adults, as recommended by the 2025 American Heart Association (AHA) Guidelines. The following discussion critically analyzes the main recommendations identified, their implications for clinical practice, and the gaps that still exist in the literature.

The latest version of the 2025 AHA Guidelines includes a total of 233 Class I recommendations, 451 Class II recommendations, and 76 Class III recommendations, the latter being subdivided into recommendations without proven benefit and recommendations associated with evidence of harm. A notable aspect of this update is the incorporation explicit of ethics as central axis of the recommendations, recognizing that guidelines based exclusively on scientific evidence are not capable of fully covering all possible clinical scenarios. Thus, the importance of careful interpretation by healthcare professionals in specific clinical contexts is emphasized, giving greater autonomy to decision-making, associated with ethical responsibility.

With regard to the management of severe airway obstruction by foreign bodies in pediatrics, the basic life support guidelines have been updated to standardize the sequence of five interscapular blows alternating with five abdominal compressions, to be performed until the foreign body is

expelled or until the child becomes unconscious. This recommendation aims to promote greater uniformity in procedures, reducing variability in care and possible errors in the initial approach. It should be noted that in cases of mild obstruction, where the child maintains effective coughing and vocalization, the guidance remains to encourage spontaneous coughing.

In infants, the approach follows the same principle, with the difference that abdominal compressions are replaced by chest compressions, due to the high risk of visceral injury associated with the former. Chest compressions, performed using a technique similar to that used in cardiopulmonary resuscitation, are primarily intended to increase intrathoracic pressure to facilitate airway clearance, rather than to restore blood circulation, as is the case with CPR itself.

In conscious adults with severe airway obstruction due to a foreign body, the 2025 AHA Guidelines maintain the recommendation of abdominal thrusts as the primary maneuver for clearing the airway, with repeated cycles of 5 back blows followed by 5 abdominal thrusts until the object is expelled or the victim becomes unconscious, as studies have shown that back blows were associated with better rates of relief from upper airway obstruction and fewer injuries compared to abdominal thrusts.

In specific situations, such as in pregnant women or individuals with significant obesity, chest compressions are indicated as a safe alternative, considering the increased risk of injuries associated with abdominal compressions.

If the adult patient loses consciousness, the recommendation is to immediately begin chest compressions according to the cardiopulmonary resuscitation protocol, interrupting them only to assess the oral cavity and remove the foreign body when it is visible. This management should be part of a systematic approach to primary assessment, following the XABCDE protocol, in which prioritization of the airway (A) occurs in an integrated manner with the overall assessment of the patient, avoiding delays in recognizing potentially fatal associated conditions. This approach reinforces the integration between OVACE management and the principles of basic life support, highlighting the importance of continuing maneuvers until the obstruction is resolved or advanced support arrives.

The discussion on the management of airway obstruction by foreign bodies, in light of the 2025 AHA Guidelines, shows that the technical excellence of the recommendations, although fundamental, is not sufficient to guarantee uniform clinical impact. The document recognizes that factors such as educational level, socioeconomic context, cultural barriers, and unequal availability of basic life support training directly influence the early recognition of airway obstruction and the proper execution of clearance maneuvers. In this sense, the effectiveness of AECO management depends not only on the technical correctness of the recommended interventions, but also on the capacity of health systems to promote community education, training of lay rescuers, and timely access to emergency services. This approach broadens the understanding of AEO management beyond the strictly clinical realm, reinforcing the need for integrated public health strategies to reduce disparities and improve outcomes in vulnerable populations.

Conclusion

Airway obstruction by foreign bodies is a potentially fatal emergency with a significant impact on morbidity and mortality in various age groups, especially at the extremes of age, such as children and the elderly. This review shows that updating procedures, in line with the American Heart Association (AHA) Guidelines, represents a safe advance in standardizing the management of FBAO, incorporating evidence-based medicine, ethical principles, and greater clarity in the application of obstruction removal maneuvers, according to the patient's age and profile.

In this context, the main update brought by the 2025 protocol of the American Heart Association (AHA) refers to the standardization of five back blows followed by five airway clearance maneuvers for all ages, applied systematically as a way to facilitate and homogenize the approach. However, this standardization presents technical variations according to age group, especially in children up to preschool age.

For preschool children, it is recommended to perform five back blows with the heel of the hand, followed by five chest compressions with both hands encircling the chest and using both thumbs. This protocol should be repeated until the foreign body is expelled or the patient loses consciousness.

In the management of OVACE in adults, as well as preschool children, schoolchildren, and adolescents, the recommendation to use the Heimlich maneuver remains, now preceded by five blows to the interscapular area using the back of the hands. In children and adolescents, the maneuver should be performed with less intensity in order to reduce the risk of rib injuries. The cycle of five blows to the back followed by five abdominal compressions should be repeated until the airways are completely cleared or until loss of consciousness occurs.

The findings described in this article reinforce that early and appropriate intervention is essential for patient survival, with the aim of avoiding neurological and cardiovascular sequelae, highlighting the importance of trained laypeople to recognize choking and, above all, to perform the initial appropriate maneuver, according to the patient's age and size. Studies show that immediate action by people present at the scene is directly associated with better clinical outcomes when compared to maneuvers performed only in prehospital and intrahospital settings, even when performed by healthcare professionals.

Thus, it is concluded that the dissemination of the AHA 2025 updates is of great importance for both healthcare professionals and the lay population in general, contributing to the improvement of the response to OVACE, the strengthening of basic life support, and the promotion of patient safety. Investments in health education, from childhood, in schools, to the workplace, with the adult population in mind, are strategic for reducing unfavorable outcomes and improving the context of urgent and emergency care in Brazil.

References

AMERICAN HEART ASSOCIATION (AHA). *Highlights of the 2025 AHA Guidelines for CPR and Emergency Cardiovascular Care*. Disponível em: https://cpr.heart.org/-/media/CPR-Files/2025-documents-for-cpr--heart-edits-posting/Resuscit ation-Science/JN1580_PTBR_Hghlghts_2025ECCGuidelines_Final_251021.pdf?sc_lang=e n. Acesso em: 23 dez. 2025.

Article List. Disponível em:<https://www.revistadepediatriasoperj.org.br/article/details?id=909>. Acesso em: 23 dez. 2025.

Zheng P, Zhang N, Chen Z, Jiang Z. Global, regional, and national assessment of foreign body aspiration (1990-2021): novel insights into incidence, mortality, and disability-adjusted life years. Scand J Trauma Resusc Emerg Med. 2025 Mar 11;33(1):40. doi: 10.1186/s13049-025-01352-z. PMID: 40069795; PMCID: PMC11895196.

Dunne CL, Cirone J, Blanchard IE, Holroyd--Leduc J, Wilson TA, Sauro K, et al. Evaluation of basic life support interventions for foreign body airway obstructions: A population-based cohort study. Resuscitation. 2024 May 1;110258–8.

Tatsuya Norii, Igarashi Y, Yoshino Y, Nakao S, Yang M, Albright D, et al. The effects of bystander interventions for foreign body airway obstruction on survival and neurological outcomes: Findings of the MOCHI registry. Resuscitation. 2024 Apr 4;199:110198–8.