



Letter to the Editor

Head-down self-treatment of choking



Sir,

It is estimated that choking can result in tens of thousands of deaths each year (incidence of 0.66 per 100,000 population).¹ For conscious adults showing signs of severe airway obstruction, the European Resuscitation Council recommends applying back blows followed by abdominal thrusts. One important limitation of current recommendations for FBAO treatment is that it requires the assistance of another person, and in approximately 30–40% of FBAO cases, the victim is alone.² Surprisingly, even if other people are present during FBAO, in only 5–13% of these cases are the observers or medical personnel able to make a correct diagnosis and initiate the appropriate treatment.² These statistics underscore the importance of developing an alternative method of treatment which could be self-applied without relying on the presence or knowledge of other people.

Multiple evidence suggest, that one of promising approaches to improve FBAO treatment in adults could be by applying the head-down (inversed) position (Fig. 1). The head-down position is already recommended during choking incidents that occur in children below one year of age.³ Similarly, it is suggested that in older children that back blows are more effective if the child is positioned head down.³ There is also evidence that combining the inverse position with other treatment methods improves its effectiveness in adults. One of the most rigorous studies supporting this was conducted by Ruben and Macnaughton.⁴ They studied FBAO in artificial larynxes attached to the endotracheal tubes of intubated volunteers. They reported that successful removal of the obstructing food could be achieved only when maneuvers were aided by gravity. One other advantage of the head-down position is that it could help remove saliva and other fluids which may further obstruct airflow during choking; particularly during partial obstruction or when a foreign object is semisolid. Moreover, I also experienced food choking, and using the upside-down position helped me to remove the

object from my airway, which later prompted me to investigate this procedure.

The main concern for head-down position is that when an object is lodged below the glottis (vocal cords), then inversion may cause a complete obstruction when the object falls on the vocal cords. Nevertheless, the infraglottic obstruction accounts for only about 25% of cases.² Therefore in majority of FBAO cases inversion should be a viable option, especially when applied as last resort method to minimize this concern. Another potential concern is that the head-down position could reduce the effectiveness of a natural cough. However, this seems unlikely as gravity-assisted positioning was reported to be more effective than cough alone in subjects with excessive bronchial secretions.⁵ Nevertheless, considering scarcity of data, the safest option could be to apply the inversed position as the last option if all other maneuvers fail. Further studies on this subject would be beneficial.

In conclusion, the available data suggest that the head-down position could be an effective method of rescuing adults suffering from a FBAO when other methods are not successful or not available (especially when a choking person is alone), thus potentially saving lives.

Conflict of interest statement

I do not have any conflicts of interests and I have nothing to disclose.

References

1. Mittleman RE, Wetli CV. The fatal cafe coronary: foreign-body airway obstruction. *JAMA* 1982;247:1285–8.
2. Berzlanovich AM, Fazeny-Dörner B, Waldhoer T, Fasching P, Keil W. Foreign body asphyxia: a preventable cause of death in the elderly. *Am J Prev Med* 2005;28:65–9.
3. Maconochie IK, Bingham R, Eich C, et al. European Resuscitation Council guidelines for resuscitation 2015: Section 6. Paediatric life support. *Resuscitation* 2015;95:223–48.
4. Ruben H, Macnaughton F. The treatment of food-choking. *Practitioner* 1978;221:725–9.
5. Lokin MI, Denning CR. Evaluation of postural drainage by measurement of sputum volume and consistency. *Am J Phys Med Rehabil* 1971;50:215–9.

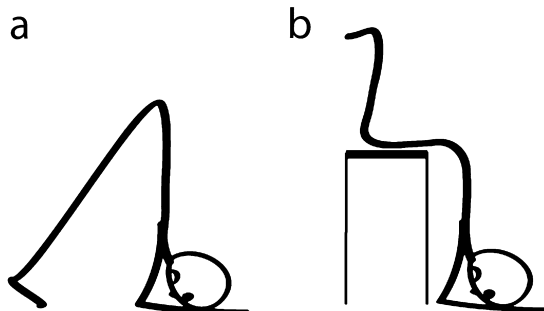


Fig. 1. Head-down position to prevent suffocation in choking. (a) Simple initial position. (b) Position with the help of a stool.

Artur Luczak
Canadian Centre for Behavioural Neuroscience,
Department of Neuroscience, University of
Lethbridge, 4401 University Drive, Lethbridge, AB,
Canada T1K 3M4
E-mail address: Luczak@uleth.ca
URL: [http://lethbridgebraindynamics.com/
artur_luczak](http://lethbridgebraindynamics.com/artur_luczak)

13 February 2016

17 February 2016