

Adam's apple and airway obstruction

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I enjoy action movies like the James Bond (007) series because many famous landmarks are filmed in them. The title of the 14th film in the 007 series was *A View to a Kill* (1985, starring Roger Moore). While watching this movie, I enjoyed the depiction of several places in France, especially the Château de Chantilly. This castle has a very beautiful garden and the Musée Condé.

Among the many collections of the museum, a drawing in a book intrigued me. A naked man is holding his neck with both hands. He seems to be suffering from asphyxia. A naked woman with an apple in her right hand is looking at him. Between the man and woman, a snake is slithering up a tree. The name of the book is *Abstract of the Bible, Revelation* (Chantilly, Condé Museum, 0028, printed in 1378) (Fig. 1).

This drawing was made very early, in 1378, well before the publication of Milton's *Paradise Lost* in 1667, which reads:

Of man's first disobedience, and the fruit
Of that forbidden tree, whose mortal taste
Brought death into the world, and all our woe,
With loss of Eden, till one greater man
Restore us, and regain the blissful seat, Sing Heav'nly Muse . . .

Among the many paintings of Adam and Eve, this one is unique because it expresses the suffering face of Adam as he experiences asphyxia caused by eating an apple. This leads to an intriguing question: why do people believe that the fruit was an apple and use the term "Adam's apple" for the thyroid cartilage? In Genesis 3:5, Vulgate, Satan says, "You will be like God, knowing good and evil (*Eritis sicut Deus, scientes bonum et malum*)." The Latin word "*malum*" has several meanings: evil, disaster, and apple. It seems that in this context, "*malum*" was understood as an apple.

As trauma surgeons, we frequently encounter patients who suffer from airway obstructions, like Adam in the above-described picture, especially in cases of facial injuries. Airway obstruction due to a foreign body often can be easily treated; if the foreign body is removed, the patency of the airway can be restored. Airway obstruction caused by trauma, however, may lead to hypoxic brain damage. In acute upper airway obstruction, an evaluation should be conducted im-

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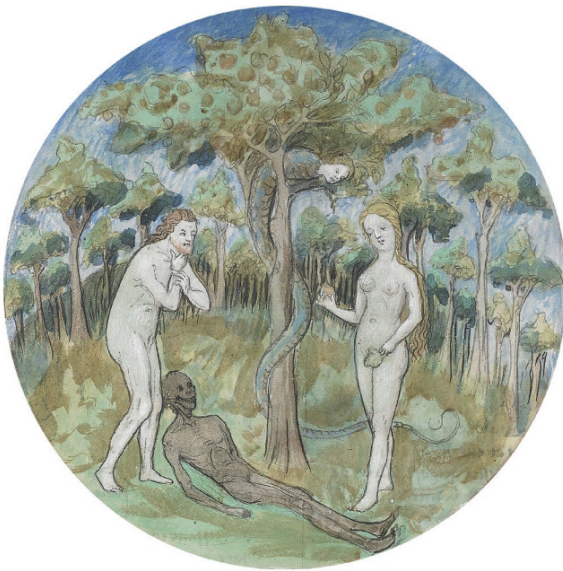


Fig. 1. Adam suffers from asphyxia caused by eating a piece of an apple. From *Abstract of the Bible, Revelation* (Chantilly, Condé Museum, 0028, printed in 1378; available from: <http://initiale.irht.cnrs.fr/en/codex/10279>), according to the creative commons license.

mediately. The necessary airway equipment should be made available at the time of evaluation.

In trauma patients, since the tongue has fallen backwards towards the posterior pharynx and blocks the airway, we can lift the tongue and clear the airway by hyperextending the head and pulling up the chin. Additionally, gentle pressure behind the jaw lifts the mandible and maintains airway patency. If this maneuver cannot restore the airway, tracheostomy should be performed following the relevant guidelines, especially in children [1].

In trauma patients, airway management is challenging beyond the placement of an endotracheal tube, and the outcomes depend upon the provider's ability to anticipate difficulty [2]. Among the types of facial trauma, panfacial fractures are caused by high-energy trauma and potentially result in upper airway obstruction, which needs a rapid diagnosis to save the patient's life [3].

With appropriate training, percutaneous cricothyrotomy can be easily performed as part of prehospital care [4]. Recently, four

cases of prehospital surgical airway cannulation on the battlefield demonstrated three successful uses of prehospital cricothyrotomy kits [5].

As known, in cricothyrotomy, a limited skin incision is made to the cricothyroid membrane between the thyroid and cricoid cartilages; in the midline just beneath the Adam's apple. Thus, Adam—the founding father of humanity, as portrayed in the Bible—gave us a landmark to maintain the airway!

NOTES

Ethical statement

Not applicable.

Conflicts of interest

The author has no conflicts of interest to declare.

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REFERENCES

1. Doherty C, Neal R, English C, et al. Multidisciplinary guidelines for the management of paediatric tracheostomy emergencies. *Anaesthesia* 2018;73:1400–17.
2. Kovacs G, Sowers N. Airway management in trauma. *Emerg Med Clin North Am* 2018;36:61–84.
3. Colombo LT, Mulinari-Santos G, Souza FA. Upper airway obstruction in a panfacial fracture. *J Craniofac Surg* 2018;29:e774.
4. Hwang K, Kim HJ, Kim YC, Choi YS, Hwang SW. Manikin model with breathing tube for wire-guided percutaneous cricothyrotomy in patients applying an intermaxillary fixation. *J Craniofac Surg* 2014;25:1846–8.
5. Schauer SG, April MD, Cunningham CW, Long AN, Carter R 3rd. Prehospital cricothyrotomy kits used in combat. *J Spec Oper Med* 2017;17:18–20.