

# AS WE WERE... ALEXANDER THE GREAT AND TRACHEOTOMY

*“Are there no more worlds that I might conquer?”*  
Alexandra the Great

The quote as arrogant as it seems to be, does not come as a surprise. Alexander the Great, arguably the most exhilarating figure from ancient times, waged war as a Homeric hero and lived as one, conquering native peoples and territories on a herculean scale. We look back at the evolution of the tracheostomy and Alexander’s life-saving heroic action, on the battlefield, albeit a different kind. It turns out that the art of clinical airway management is as old as medicine itself. Tracheotomy is one of the oldest known surgical procedures, dating back to ancient Egypt and India.

The historical development of tracheotomy can be divided into five periods:<sup>2</sup>

- 1 The Period of Legend (2000 BC to AD 1546).
- 2 The Period of Fear (1546 to 1833), during which the operation was performed only by a brave few, often at the risk of their reputations.
- 3 The Period of Dramatisation (1833 to 1932), during which

tracheotomy was performed only in emergency situations on acutely obstructed airways.

- 4 The Period of Enthusiasm (1932 to 1965), during which the saying, ‘if you think of tracheotomy—do it!’<sup>3</sup> became popular.
- 5 The Period of Rationalisation (1965 to the present), during which the merits of tracheotomy versus intubation remain a topic of debate.



Oldest description of tracheostomy (“laryngotomia”) in a manual of the Italian surgeon and anatomist Giulio Casseri (Julius Casserius, 1552-1616).<sup>1</sup>

The first written documentation of tracheotomy appears in the Rig Veda, a sacred book of Hindu medicine written between 2000 and 1000 BC.<sup>3,4</sup> It describes ‘the bountiful one, who can cause the windpipe to reunite when the cervical cartilages are cut across, provided that they are not entirely severed’.<sup>2</sup>

Homer, writing in the eighth century BC, referred to the operation to



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relieve choking persons by cutting the trachea.<sup>5</sup> Five centuries later in Egypt, following the work of Imhotep, a technique resembling tracheostomy was first documented in written form.<sup>6</sup>

It is impossible to know exactly when the first tracheostomy was attempted, but there is evidence from hieroglyph slabs belonging to King Djer in Abydos and King Aha in Saqqara that tracheostomy was performed in ancient Egypt in about 3100 BC.

The next recorded mention is in the fourth century BC, when Alexander III of Macedon, more commonly known as Alexander the Great (356–323 BC), is said to have saved the life of a soldier choking from a bone lodged in his throat by puncturing his trachea with the point of his sword.<sup>5</sup> Though there are no further accounts of this episode, nonetheless the legend persists.

Until 1707 the procedure was known as ‘laryngotomy’. It was Pierre Dionis who

started calling it ‘bronchotomy’;<sup>7</sup> in 1718, Lorenz Heister recommended that it should be called ‘tracheostomy’ and that all other terms should be discarded. To allay the semantic debate, tracheotomy refers to surgical opening of the trachea, while tracheostomy involves insertion of a tube into the trachea.

In 1799, George Washington died of upper-airway obstruction after developing bacterial epiglottitis in the presence of three physicians, one of whom was aware of the described procedure of tracheostomy, but declined to perform it because he felt it was a futile effort and was wary of performing this ‘novel’ procedure on the president!

In 1909, Chevalier Jackson defined factors that predisposed to complications, such as a high incision, use of an improper cannula, poor postoperative care, and splitting of the cricoid cartilage.<sup>8</sup>

Indeed, the armamentarium for tracheotomy has evolved from thrusting a reed over the point of a sword into a choking soldier to the modern meticulous surgical procedure that predictably bypasses the upper airway for a variety of indications, both emergent and non-emergent.<sup>3</sup> The odyssey of the surgical airway has come a full circle. The legacy lives on...

*Images courtesy of Creative Commons, Wikimedia Commons.*

## References

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- 5 Gordon BL. Ancient Surgery: in Gordon BL. The Romance of Medicine: The Story of the Evolution of Medicine from Occult Practices and Primitive Times. Philadelphia: F. A. Davis; 1944: 461.
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- 7 Dionis P. Cours d’operatione de chirurgis, ed. Paris: L dHoury; 1751.
- 8 Jackson C. Tracheostomy. Laryngoscope 1909; **19**:285.
- 9 Image courtesy Wikimedia, from an ancient mosaic in Pompeii, Italy.



‘Cold, calm eyes’... Mosaic of Alexander the Great: DEA/G Nimatallah/DeAgostini/Getty Images <sup>9</sup>

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