



# Surgery and anesthesia: an inseparable pair

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This article was written in October 2021, a time close to October 16, a date that is quite familiar and significant for all those who have studied or read the history of anesthesiology. On October 16, 1846, the Boston dentist William T. G. Morton performed a surgery to remove a vascular tumor from a patient's neck, and in this surgery, he used sulfuric ether to anesthetize the patient. This surgery is believed to be, according to the bulk of related literature, the first surgical procedure to use anesthesia, which explains why this date is so meaningful to those who know it.

Morton called his creation "Letheon", named after the Lethe River of Greek mythology, noted for its waters that helped erase "painful memories". This naturally reminds us of the etymology of the word "anesthesia": it is the combination of the prefix "an-" ("without" in Greek) and "aisthēsis" ("sensation" in Greek), which shows that the early understanding of anesthesia focused on insensibility. In a letter from Oliver Wendell Holmes, Sr. to William T. G. Morton, Holmes wrote, "*Everybody wants to have a hand in a great discovery. All I will do is to give a hint or two as to names—or the name—to be applied to the state produced and the agent. The state should, I think, be called 'Anaesthesia.' This signifies insensibility—more particularly ... to objects of touch*".

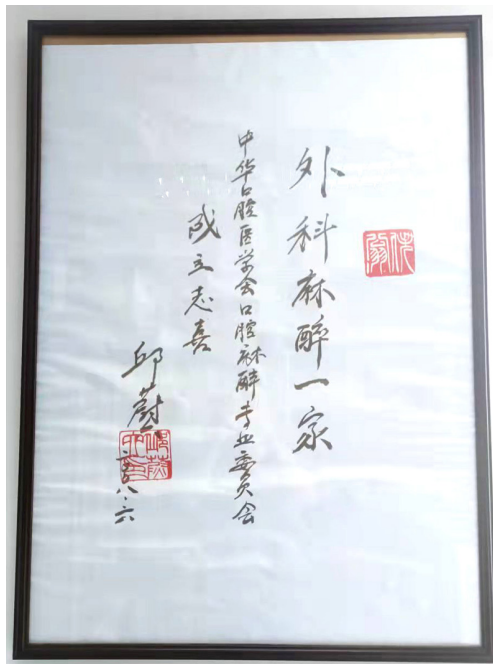
Of course, nowadays we talk about much more when we use the word "anesthesia". However, in the early days, pain was a major obstacle that could not be overlooked when surgical procedures were being performed. There is a description of the procedure of removing teeth in the *Oxford Textbook of Anaesthesia for Oral and Maxillofacial Surgery*:

*A small, scruffy black and white dog picks its way over the cobbles, between the horses and piles of rubbish. It stops at a*

*doorway and sniffs, hopefully, and begins to sidle in. Then it leaps back into the road, barking frantically as a scream from within rends the air. A young man in blue stockings and brown frock coat rushes out, clutching his hand over a copiously bleeding mouth. He is followed into the daylight by a muscular man in a bloodstained apron, clutching a large blackened tooth in a pair of pincers. The 'dentist' leans against his red and white striped pole and shakes his head sadly, then steps back into his shop with a shout of "next".*

This description evokes a scene that is bloody, frightening, and at the same time dangerous. However, it cannot be denied that this was once people's impression of surgery, which made the relief or elimination of pain the main objective in surgical procedures. Over time, the significance of this objective has still not abated but has rather evolved into the pursuit of comfort, the accompanying concept of "comfort care", and a shift in focus from elimination of pain sensation to the improvement of the quality of life. Apart from this, there have also emerged the concepts of "outpatient surgery" and "enhanced recovery after surgery" (ERAS), which again exemplify patients' pursuit of greater comfort and higher quality in medical care. In each of these, one must note that anesthesia plays an integral part that can never be ignored.

Indeed, surgery and anesthesia can never be discussed separately. As described in the passage quoted above, without anesthesia, the surgery itself can become torture. This is not hard to understand: if an accidental sting by a needle can elicit great pain, imagine the torment brought about by the incising of the skin or the cutting of bones. Besides pain, surgery without anesthesia allows for the accumulation of dangers: unstoppable bleeding, drops in temperature, hypoxemia, and other effects can all be fatal



**Figure 1** The author's inscription for the foundation of Oral Anesthesia Committee of the Chinese Stomatological Association, which goes: "surgery and anesthesia belong to the same family".

factors during surgical procedures. When these occur, anesthesia is the solution. Anesthesia in surgery shields patients from pain, guarantees their safety, and has gradually become the necessary condition for more comfortable and quality medical care.

Human history can be characterized as the struggle against illness and pain. In envisaging illness and pain as the enemy, the surgery itself becomes a powerful form of armament. However, without anesthesia, this weapon attacks both friend and foe alike. In other words, in this fight for health, surgery and anesthesia are inseparable. Time passes, the age changes, but the fight seems

everlasting. Even so, We believe that, with the continued development of surgery and anesthesia, humanity will grasp victory in the end (Figure 1).

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