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# Surgical History

## *Ambroise Paré (1510 to 1590): A Surgeon Centuries Ahead of His Time*

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In their extensive writings, Hippocrates and Celsus counseled physicians to be knowledgeable in both the medical and surgical management of patient recovery.<sup>1</sup> However, their words fell by the wayside because cutting of the body was forbidden by the Roman Catholic Church. Furthermore, the contemporaneous Arabic medical teachings emphasized tradition and authority over observation and personal experience. This created an ever-growing rift between the schools of surgical and pharmacologic medicine with both groups denying their involvement in the other domain. Surgeons had been plagued by postoperative complications including infection, malnutrition, and muscular wasting for centuries. Surgeons were forced to re-examine how diet and exercise affected outcomes before the advent of microbiology and advances in pharmacology. All of this changed when Ambroise Paré, a 16th century surgeon, revolutionized the medical world with his astute observations of postoperative diet and exercise.

**A**MBROISE PARÉ WAS born in 1510 in the small village of Bourg-Hersent, France. Little is known about his father, who may have been a chest maker or valet-de-chambre and barber. To begin his medical training, his father sent Paré to the Roman Catholic Church to learn Latin. Despite his father's wishes to learn Latin, financial issues prevented the young Paré from receiving a sufficient education from the local chaplain.<sup>2</sup>

In 1523, 13-year-old Amboise Paré apprenticed himself to surgeon Vialot of Laval. It was Vialot who began Paré's education with bleeding, leeching, bandaging, and performing minor operations. Paré's brother, long admired for his surgical skills and great judgment, imparted a strong appreciation for keen observation and deductive reasoning. In Paré's books, he recalls instances in which his older brother saw through the disguises used by beggars to appear diseased. During his apprenticeship with Vialot and Paré's older brother, he began studying French translations of the works by Galen and other ancient physicians.<sup>2</sup>

Paré eventually traveled to Paris in 1530 for a residency at the Hotel Dieu. At the time, the Hotel Dieu was the only truly public hospital in Paris serving the poor. Run by the clergy and staffed by medical interns and externs, the hospital provided essential medical,



FIG. 1. Portrait of Ambroise Paré. Reprinted from Paré A. *Ten Books of Surgery, with the Magazine of the Instruments Necessary for It*. Athens, GA: University of Georgia; 1969.

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surgical, and pastoral services. Alongside his fellow residents, Paré provided general medical care, dressed wounds, and performed autopsies. Paré wrote affectionately of his residency, recalling having conducted operations not normally allotted to residents such as frostbitten nose amputations. It was also there that he learned of the factors that affected his patients' recovery.<sup>2</sup>

When he left the Hotel Dieu in 1536, his lack of Latin training prevented him from sitting for the surgical licensing examination to practice in Paris. Consequently, Paré became a military surgeon and joined the French campaign to secure the Duchy of Milan.<sup>2</sup> This campaign marked the beginning of Ambroise Paré's (Fig. 1) double life as a military surgeon of many campaigns and, after passing his licensing examination in 1541, a surgeon in Paris. His reputation and skills became widely known, allowing him to serve as Premier Surgeon to four French kings and numerous powerful noblemen. Although he enjoyed royal patronage,

Paré never ceased to care for the common people who provided him a population on which to experiment with new instruments (Fig. 2) and treatments. Paré is well known for his reintroduction of ligatures to stem bleeding vessels. He also used a mixture of antiseptic turpentine, chelating, and nutrient-rich egg yolks and soothing rose oil instead of boiling oil for treating gunshot wounds.<sup>2</sup> Less widely known but equally important, Paré developed practices that have recently been proven essential for recovery and well-being. For example, he stressed the need for a varied diet for recovering surgical patients, stating that each meat has its own nutrient abundance and deficiency. Therefore, eating many different meats allowed one to maintain nutrients necessary for the body.<sup>2</sup> Paré refined the use of diet and anti-inflammatory agents to affect wound healing. He wrote that, "a slender, cool, moist diet must be observed until such time has passed, wherein the patient may be safe and free from accidents. . . he shall abstain from salt and spiced flesh, and also from

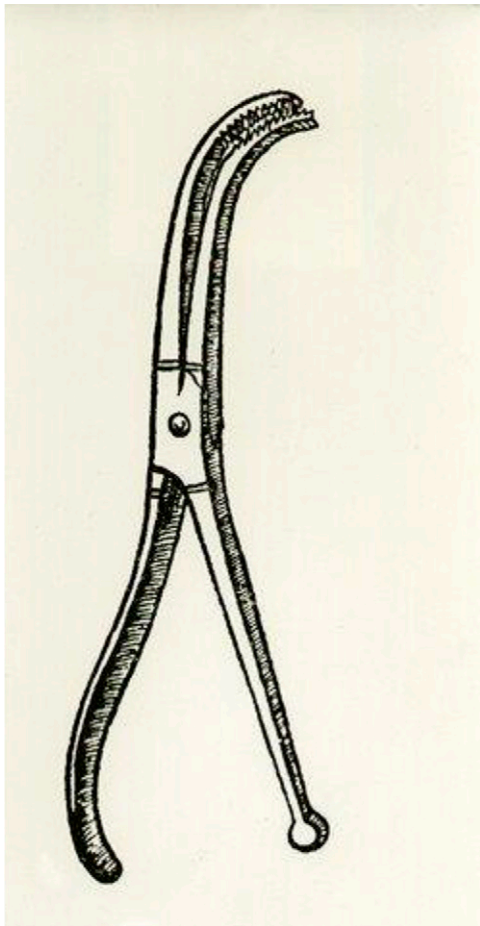


FIG. 2. Crow's beak clamp used by Ambroise Paré to grab and temporarily seal blood vessels during amputations before applying permanent ligatures.<sup>1</sup> Reprinted from Packard FR. *Life and Times of Ambroise Pare*. London, UK: Milford; 1922.

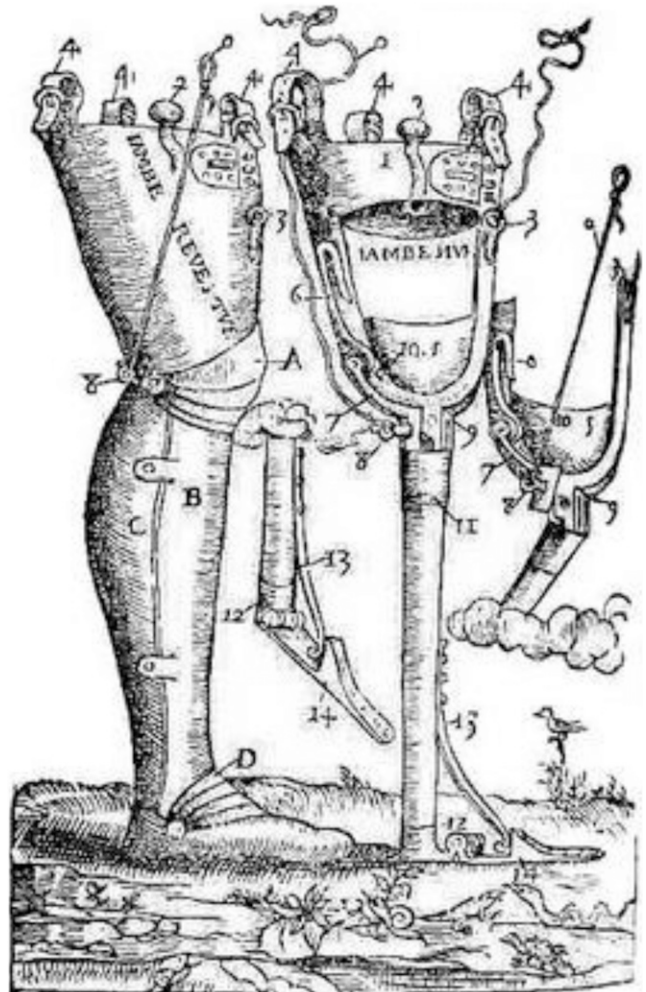


FIG. 3. A diagram of a prosthetic leg designed by Ambroise Paré.<sup>1</sup>

wine; . . . When he shall seem to be past danger, it will be time to fall by little and little to his accustomed manner of diet and life.”<sup>3</sup> To alleviate suffering, Paré developed an opium-based anesthesia for surgery. From postoperative recovery observation, Paré developed rehabilitative therapies and equipment to promote circulation, strength, and mobility. Today, evidence-based medicine has proven that postoperative exercise improves outcomes by lessening patient deconditioning, which affects mortality, mobility, functional status, and quality of life.<sup>4</sup>

Throughout his career, Paré used his keen observation to discover and write papers detailing the effects of diet and exercise on health maintenance and healing as well as discussing pediatric, obstetric, pharmacologic, surgical, and reconstructive subjects (Fig. 3) involving every part of the body. In his writings, he stated the great tasks a surgeon performs as: “To eliminate that which is superfluous, restore that which has been dislocated, separate that which has been united, join that which has been divided and repair the defects of nature.”<sup>1</sup> However, Paré also emphasized that no surgeon may practice surgery without knowledge of

diet and pharmacy because both are necessary for recovery.

Amboise Paré lived through times filled with religious and political wars, continuing to serve the wounded, suffering, and ailing until his death on December 20, 1590, from natural causes.<sup>2</sup> His legacy not only lies in his discoveries of treatments for battlefield wounds, but also in his advances of nearly all aspects of medicine and surgery. His writings advanced the fields of surgery and medicine throughout Europe, immortalizing him in the history of medical care.

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