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# Ambroise Paré: The gentle barber-surgeon



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Ambroise Paré (1509?-1590), often called the Father of Modern Surgery, was a French barber surgeon. Because of his innovative approach to surgery and patient care, he was elevated to the position of master surgeon. Despite his humble beginnings, his persistent pursuit of surgical education, coupled with his keen reflective observations on patient outcomes, led to an exceptional career in Paris and as surgeon to four French Kings. His progressive ideas moved surgery from the dogma of the Renaissance. His lasting legacy is the ethic of gentleness in surgery.



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## Early life

Ambroise Paré was born in Bourg-Hersent, France, in 1509 or 1510 during the War of the Holy League (Figure 1). His father's success as a master carpenter enabled both Paré and his brother to pursue medical careers. Another of his three siblings, a sister, married a barber surgeon. At 13, to prepare him for medicine, his father sent Paré to the village clergy to learn Latin, an absolute requirement for a career in medicine or surgery. It is unknown exactly how long young Ambroise spent attempting to learn Latin, but we know he was unsuccessful.<sup>1</sup>

Undeterred, he moved to Paris to begin apprenticeship under a master barber surgeon in the early 1530s. He spent most of his time sweeping the shop and trimming beards.<sup>2</sup> The only time Paré was allowed to attend lectures or read surgical texts was during the late night and early morning hours when the shop was closed. Master barber surgeons prohibited apprentices from attending lectures at the university because they were needed for work. Between haircuts, trims, and shaves Paré was taught phlebotomy and leeching. After several years of toil he received his diploma as a full-fledged barber-surgeon.<sup>1</sup>

During his years in training Paré absorbed the lessons of his predecessors, prominently Guy de Chauliac (c. 1300-1368), the influential French surgeon of the Middle Ages famous for his contributions to the field of surgery.<sup>3</sup> De Chauliac's most famous quote continues to inspire to the present day.

*Let the surgeon be well educated, skillful, ready, and courteous. Let him be bold in those things that are safe, fearful in those that are dangerous; avoiding all evil methods and practices. Let him be tender with the sick, honorable to the men of his profession, wise in his predictions; chaste, sober, pitiful, merciful; not covetous or extortionate; but rather let him take his wages in moderation, according to his work and the wealth of his patient, and the issue of the disease and his own worth.<sup>1</sup>*

Paré embraced the nobility of his profession expressed by de Chauliac, both in how he conducted his life and how he practiced surgery.

## Medical training

After Paré obtained his diploma, he sought one of the coveted positions at Hôtel-Dieu de Paris as a surgical trainee.<sup>1</sup> Although Hôtel-Dieu was initially built as a shelter for the poor in the 7th century, the hospital, run by the clergy, also provided care to the sick. During the time of Paré, Hôtel-Dieu was a 3,500 bed facility, often with 2 or more patients per bed (4). During his training at the Hôtel-Dieu, Paré provided medical care, notably during one of the major outbreaks of cholera that swept the city. He performed autopsies and taught students from 1532 to 1536.

His formal instruction was inhibited by the strictures of the church and the traditions of the profession. The church forbade cutting on the human body, so the teaching of surgical procedures was actually quite limited during his training. Most learning was on the corpse after the patient died.<sup>1</sup> Medical practice was based on Galenic dogma with little, if any, advancement through direct observation and experimentation.<sup>2</sup>

## Military service

After his time at the Hôtel-Dieu, Paré did not qualify for a license in surgery because he never mastered Latin.<sup>4</sup> However, he was welcome in the French military. Despite his years of training, he performed his first amputation during the expedition. At the Siege of Turin during 1536-1537, Paré saw the common practice of cauterizing gunshot wounds with boiling oil, with the predictable inflammatory response of fever, pain, and swelling of the wound.<sup>5</sup> During the conflict he ran out of medical supplies, including the oil. He saw how boiling oil damaged tissues. Stephen Paget, biographer and a surgeon like his famous father, Sir James Paget, translated Paré's account of what happened next.

*At last my oil ran short, and I was forced instead thereof to apply a digestive made of the yolks of eggs, oil of roses, and turpentine. In the night I could not sleep in quiet, fearing some default in not cauterizing, that I should find the sounded to whom I had not used the said oil dead from the poison of their wounds; which made me rise very early to visit them, where beyond my expectation I found that those to whom I had applied my digestive medicament had but little pain, and their wounds without inflammation or swelling, having rested fairly well that night; the others, to whom the boiling oil was used, I found feverish, with great pain and swelling about the edges of their wounds. Then I resolved never more to burn thus cruelly poor men with gunshot wounds.<sup>1</sup>*

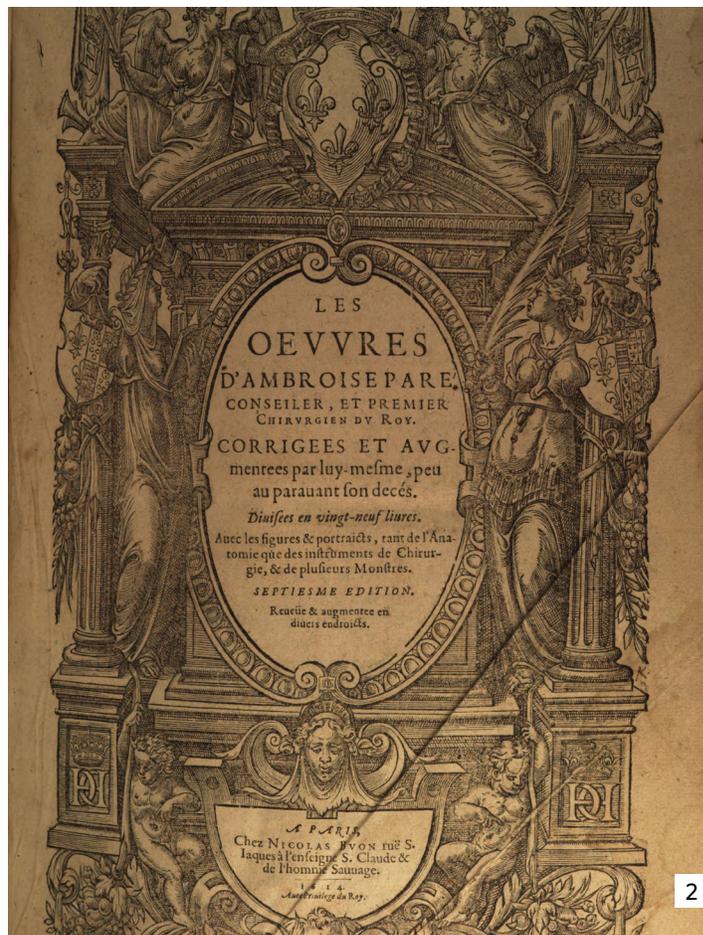
This was the start of his divergence from medical dogma.<sup>2</sup> Freed from authority and tradition, he tried different ways to treat burns. "See how I learned to treat gunshot wounds," the surgeon who never mastered Latin wrote, "not by books."<sup>1</sup>

The same campaign he wrote the timeless quote associated with him, "*Je le pansai, Dieu le guérit* (I bandaged him, God cured him)," a terse description of his treatment of a French officer, a Captain le Rat. The officer and a group of soldiers fired into an enemy position. When they returned fire, an arquebus shot struck the Captain's right ankle. The officer shouted, "Now they have got the Rat," a quote somewhat less memorable than Paré's laconic account!<sup>1</sup>

As a reward for his service during four military tours, upon his return to Paris in 1541 he was granted status of master barber surgeon. In 1554, at the age of 44, he was appointed master barber surgeon to Francis I. He passed an oral exam to win designation as master surgeon, his substandard Latin graciously overlooked because of his stature and his undeniably superior surgical skill. He served as master surgeon for three additional French monarchs over more than 30 years. He died in 1590.<sup>1</sup>

## Contributions to surgery

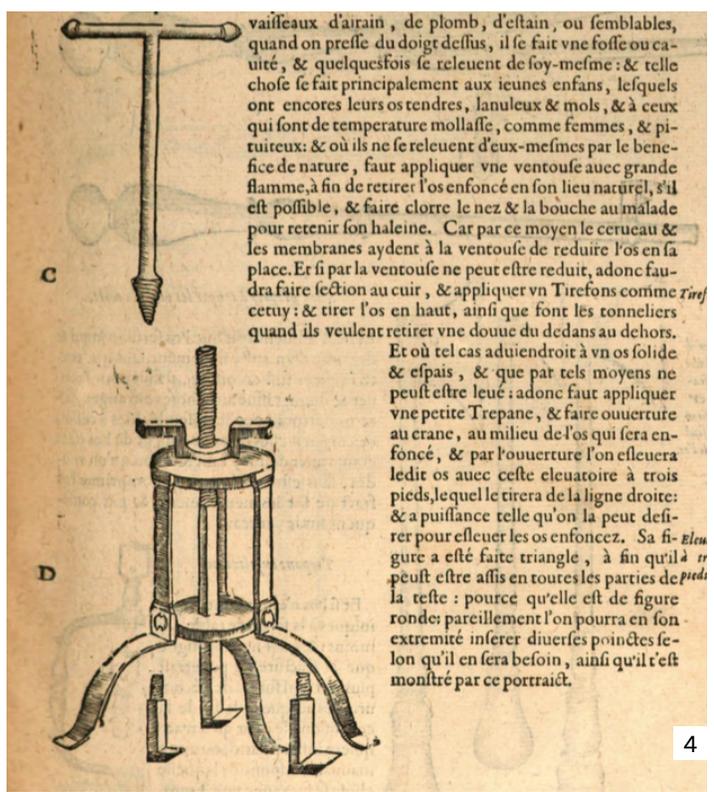
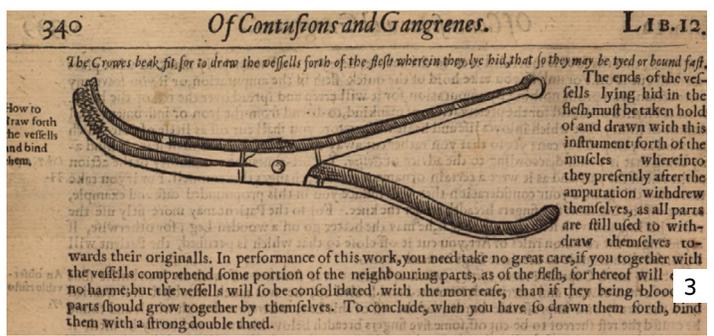
Paré wrote on a wide range of medical and surgical subjects. His Latin was awkward at best, so he used French (Figure 2). As a result, his writings immediately became widely popular and the basis of clinical practice during his lifetime.<sup>2</sup> As a military surgeon he saw the evolution of guns and ammunition, so one of his first books was on the treatment of gunshot wounds.<sup>5</sup>



Recognizing that hemostasis by bathing the freshly amputated stump in hot oil caused unnecessary pain and damage to tissues that ultimately would have to heal, Paré used ligatures to tie off individual vessels. He was advocate of gentle handling of tissues (Figure 3). He developed the *bec de Corbin* (crow's beak), a clamp designed to grasp a bleeding vessel. The approach gave victims with a penetrating neck wound, an otherwise mortal injury, a chance at survival.<sup>6</sup> Along with the scalpel, probe, and forceps, the clamp became one of the fundamental tools in surgery and among the significant technological advances of the era. He designed many other instruments, such as the *bec de Gruë* (crane's beak) and *bec de Cane* (duck's beak), both forceps with long, thin blades to extract bullets from deep wounds. His trepan was stabilized by a three-footed frame that made the drill more stable on the skull, an improvement over the conventional two-footed design (Figure 4).<sup>7</sup>

Long before anesthesia he was an advocate of pain relief after surgery, and he gave opium to his patients.<sup>4</sup> Inspired by the example set by his medical colleagues, he emphasized care of his patients following surgery in an era where many patients were seldom seen again by a surgeon after a surgical procedure.<sup>1,4</sup>

A lasting contribution to the profession was the importance of modifying surgical care on the basis of empirical observations. In a time when Galenic dogma dominated medical thought and practice, Paré changed the entire approach to clinical surgery. On the basis of his innovative approach to surgery, based on empiricism and technology, Paré deserves the appellation, "Father of Modern Surgery."<sup>2</sup>



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