

## PIERRE-JOSEPH DESAULT, 1744-1795

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**Abstract:** Pierre-Joseph Desault (1744-1795) was the first French professor of clinical surgery. The clinical school of surgery which he instituted at the hospital Hôtel-Dieu attracted great numbers of students from France and other countries. In 1791 he established a *Journal de chirurgie*, a record of the most interesting clinical cases. He introduced many improvements to surgical practice and construction of surgical instruments. Desault published his work rarely, but his students later did, based upon his lectures. He was teaching surgery in an innovative way, in French, with a lot of demonstration and practice. Therefore, he is rightly considered a forerunner of modern medical teaching. Although primarily a surgeon, Desault practically signed the birth certificate of nephrology by clinical observation, and is considered, together with Chopart, a pioneer of urology. His influence on the development of medical science in France is great, but his ability to organize the hospital and his exceptional pedagogical activities are especially emphasized.

**Key words:** Pierre-Joseph Desault, hospital Hôtel-Dieu, French surgery

French anatomist and distinguished surgeon, was born at village Magny-Vernois, a small place near Lure, in 1738 on February the 6th [1], although different data about his birth year can be seen on a bust near University of Medicine (figure 1). There are various opinions about how his surname is spelled and written, because in official documents we can find surnames as "Dusaut", "de Sault" or "Dessault" [2]. As it is mentioned in a thesis by Saison, his surname was repeatedly confused with a name of physician Pierre Desault, who lived in a city of Bordeaux (1675-1737). Desault's nephew claimed that Desault was pronounced nobleman by king Louis XVI, and received a coat of arms, which couldn't been verified in official documents[2].

He came from a humble family and was supposed to be a priest. Because of his poverty, he was educated by the Jesuits. However, he early decided to study medicine. He was the scholar of a local barber-surgeon. He acquired some knowledge about anatomy and military surgery in the military hospital of Belfort. He collected and wrote medical information about the wounded he was taking care of. As it was cited later by Marie François Xavier Bichat (1771-1802), the reader of this records would have an impression that Desault was a very experienced surgeon. His favorite studies were anatomy and mathematics, and he applied mathematical principles to his anatomical investigations. Desault translated Borelli's „*De Motu Animalium*” with notes and illustrations.

Exceptionally interested in topographic anatomy and surgery, he came to Paris in 1764, while in his twenties. Although he didn't graduate yet, he opened a school of anatomy in the winter of 1766. During the same year, he became a member of the Corps of Surgeons. He successfully worked as a substitute professor from 1766 to 1776. His school of anatomy was attended by about 300 pupils, many of which were older than himself. As a first author in the new departments of Académie Royale de Chirurgie, he presented his thesis in 1776. He met François Chopart (1743-1795) in L'Ecole pratique, and they remained loyal friends until the rest of their lives. In the year 1782, he became a major surgeon to the

**Figure 1.** Desault's bust



hospital De la Charit . In this hospital he met Louis Desbois de Rochefort (1750-1806) and his deputy J.N.Corvisart (1755-1821) whose clinics were very well known at that time[1].

He was married to Marguerite Thouvenin in February 1782, and got a son Alexis-Pierre-Mathias in 1784.godine.

In 1785 he became a surgeon in a hospital H tel-Dieu (figure 2). After the death of Moreau, almost the whole surgical department of that hospital was entrusted to him. As it is described by Tenon (1724-1816), the hospital of H tel-Dieu was in very bad condition. In a few months, as a chief of surgery, Desault

**Figure 2.** Hospital H tel-Dieu



changed the way of management, improved patient care and introduced lectures, therefore giving this hospital an educational significance. Within a few years he was recognized as one of the leading surgeons of France. The school of anatomy and surgery which he instituted, attracted great numbers of students from every part of France, and even from other countries. Usually there were about a 100 students in the hospital and most of the surgeons of the French army derived their knowledge from him. Desault distanced himself from Surgical Academy and obsolete methods in hospital H tel-Dieu. This conflict lasted from 1787 until 1789. He was a reformer of both surgery and the teaching methodology. He introduced many improvements to surgical practice and construction of surgical instruments [3].

Desault was spending most of his time in H tel-Dieu hospital. He organized rounds, took care of patients, operated in front of students and performed autopsies. He held lectures regularly, evaluated students' knowledge and followed their work with patients. His lecturing program was consisted of anatomy, operative practice and clinical knowledge, which he considered the base element of their education. The lectures were performed in French, not in Latin, and they were both verbal and practical. Between 1780 and 1781 in Paris, student Louis-Marie Lavergne (1756-1831), from Breton, wrote Desault's anatomy lectures in form of a manuscript in 23 volumes. These were preserved by his descendant, doctor Ro ault de La Vigne from Rennes. The way of expression in these manuscripts is mostly descriptive.

In 1791 he established a Journal de Chirurgie, a record of the most interesting clinical cases, edited by his students. Desault published his work rarely, but his students later did, based upon his lectures. Together with Chopart he published Trait  des maladies chirurgicales in 1779. Among his students, Bichat stood out the most (figure 3). Desault welcomed him into his home and entrusted him with part of his obligations, especially private practice[1]. Two years after Desault's death, in 1797, he abandoned surgical practice and became a physiologist. Desault's work would be vanished from the history of medicine, if it wasn't for Bichat, who consolidated all of his lessons from surgical journals and published them as books. He published Desault's surgical doctrines in O'Evres chirurgicales de Desault (1798-1799). Later, he wrote a treatise on surgical operations in three volumes and treatise of fractures and dislocations, which was translated to English in 1805, and went through three American editions.

**Figure 3.** Desault and his pupil Bichat



Bichat summarized succinctly the glory of Desault in hospital H tel-Dieu: "He had a great stage and showed great talent, he had fertile fields and he sowed discoveries, every year he had the enthusiasm of 400 students to pass on his knowledge to them.". According to Bichat, it was an implementation of the formula by Antoine-Fran ois de Fourcroy (1755-1809): „Some reading, a lot of things to see and a lot of stuff to do, that would be the base of the new education.”[3].

Desault renewed and advanced surgical technique. He removed tumors and used casts and catheters to treat his patients. In thoracic surgery, he treated cancer with medicine and different surgical methods. He made a clinical study about rectal and anal carcinoma, treated femoral neck fractures and improved



**Figure 4.** Desault bandage

treatment of fractures of the upper extremity. Desault bandage is used for binding the elbow to a person's side in fractures of the humerus (figure 4). He also treated crural ulcers with immobilization using casts with graduated pressure[1].

Both Desault's clinical dedication and observation cleared the path toward new field in medicine, the field of nephrology [1]. He observed his findings as a pathophysiologist and he recognized polyuria (or diabetes as it was called at that time), which is the consequence of disorders of the body fluids, and also disorders of the kidney. He noticed that the first type was painless, preceded by thirst, dry skin and the signs of dehydration, and indicated a metabolic disorder without problems in kidney functioning. The other one was the consequence of inflammation or destruction of the kidney's parts, or the kidney in general. He defined suppression or retention of urine as a disease where urine is not produced in kidneys, and he distinguished causes as clogging of kidney blood vessels, congestion of secretory tubules with pus or blood, and bilateral kidney inflammation. This classification was primarily anatomic and was based upon his autopsy findings. On 45 pages in *Journal de chirurgie* and in *Traité des maladies chirurgicales* he described the clinical symptoms which were not caused by a lesion and were not of surgical nature, and the rest of his presentation was dedicated to lithiasis, retentions and incontinations. He was interested in pathology of the urinary tract since 1776 when he had tried to modificate one Hawkins' instrument for vesical lithotomy[5]. Later, he was interested in rubber bouiges which started to replace the silver probes for treatment of advanced stages of gonorrhea. Desault expanded the use of his instrument for treating obstructions of lower urinary tracts. Chopar published in 1791 his *Traité des maladies urinaires*, where he used again the Desault's notes from his lectures about disorders of urine secretion and excretion. Century later, they were acknowledged in the *History of Surgery* as a pioneers of urology. Shortly after their death, medical interest for urinary diseases decreased, so Desault's work became instantly forgotten. If his work wasn't forgotten, it would represent the base of modern nephrology.

The last years of Desault's life were marked by misfortune and sad events. As a victim of one judge's hatred, he was brought to court of justice in 1792. According to the French encyclopedia[4], he was interrogated twice in 1792. He was arrested on the 28th of May in 1793, while he was lecturing, and was taken to prison in Luxembourg. This imprisonment represented just one step towards guillotine. After three days he was liberated through the influence of his patients and students.

On the 31st of May 1795 he visited Crown prince Louis XVII, the son of king Louis XVI, due to his severe illness. Desault died shortly after that, on June the 1st, from ataxic fever[7]. There were doubts that Desault was poisoned because he had refused to do anything against the Dauphin's life. The suspicion was deepened because of sudden death of Chopart as they both treated the Crown prince, but these claims were refuted by an autopsy performed by Bichat.

### CONCLUSION

Desault was a clinical physician, but primarily a surgeon. Thorough his work, he was also a great pedagogue. He didn't publish his work, but notes from his lectures were recorded by his students. All the books were published after his death. Petit said that Desault had prejudice about medicine and had considered that it is based on assumptions, while he was only interested in precise facts[3]. His medical information was accurate, although he did not try to systematize the pathology[6].

Bichat said that Desault was convinced that teaching medicine is the best way to perfect it. One should be clear, start from observed and accurate facts, think before acting, follow the evolution of the disease and compare similar cases. He kept himself away from University and Academy, for he did not like hypothesis and discussions. He lived and worked exclusively as a hospital doctor.

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