



# The history of anatomy teaching in Lyon University: in the footsteps of Rabelais, Petit, Lisfranc, Testut and Latarjet, and many others

Michel-Henri Fessy<sup>1,2,3</sup> · Jean-Paul Carret<sup>1,2</sup> · Anthony Viste<sup>1,2,3</sup> 

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## Abstract

Anatomy and Lyon have a very long history together since the first hospital in France was set up on the banks of the Saône River in the fourteenth century. The Lyon school of Anatomy was originally in the Hôtel-Dieu, which later housed the “secondary” (1821) then “preparatory” (1841) schools. Only in 1877 was the Medicine and Pharmacy Faculty set up. The development of anatomy teaching followed the rise of printing in the fifteenth century. The rise of surgery was founded on knowledge of anatomy and the ability to teach it. Before the days of anesthesia, surgery required perfect anatomical skills, to keep operative time to a minimum. Correlation with anatomy accompanied the introduction of radiology and later of medical imaging in general; the science of Anatomy is nowadays enriched by robotics and information technology.

**Keywords** Anatomy · History · Surgeons · Lyon University

## Guy de Chauliac (1298–1368)

The great Guy De Chauliac practiced his surgical arts near the Saint-Just Monastery in Lyon, of which he was appointed Canon in 1344. In 1363, he published his *Chirurgia Magna*. Documents of the time showed that he gave “anatomy lessons” in Lyon in the historical sense of the term (i.e., dissection) [1]. His mentor was Alberto Bertuccio (died 1347) (successor to Mondino), under whom he had studied in Bologna in 1326, with four-step dissection, allowing for progressive decay: abdominal cavity, thorax, skull, then limbs. “A surgeon who does not know anatomy is like a blind man working wood.”

In 1473, 3 years after the first printed books in Paris, printing began in Lyon, which quickly became the third most important city in the world for books. It was indeed printing that gave the city its prime role in spreading knowledge of

anatomy during this period. Rabelais (1494–1553) gave an “anatomy lesson” in Lyon in 1537. The book by Thomas Willis (1621–1675), known for its presentation of encephalic vascularization, was published in Lyon, as were the works of Régnier De Graaf (1641–1673), Thomas Bartholin (1616–1680), and others.

## Marc-Antoine Petit (1766–1811)

Anatomy finds pride of place again with the construction of the “Grand Hôtel-Dieu” on the right bank of the Rhône. Candidates for the Surgeon Major examination had to present an anatomic preparation. The first Surgeon Major thus to be appointed, in 1788, was Marc-Antoine Petit (Fig. 1). At Hôtel-Dieu, he ensured not only clinics but also teaching, which he organized. We know how important anatomy was to him: in his eulogy for Pierre-Joseph Desault (1738–1795), he wrote, “Anatomy is the physician’s torch: it should light his first steps”.

He entrusted the teaching of anatomy to his deputy, the Assistant Surgeon Major, who would go on to replace him in that office: Jean-Marie Viricel (1773–1855). We have a testimonial about his teaching, by Jacques Lisfranc (1790–1847), who came to study at Hôtel-Dieu from 1806 to 1809 [3]; the Assistant Major never tired of saying, “You do anatomy ten times, so that you will know it the eleventh”. That is a

✉ Anthony Viste  
Anthony.viste@chu-lyon.fr

<sup>1</sup> Faculté de Médecine et Maïeutique Lyon Sud-Charles Mérieux, Laboratoire d’Anatomie, 165 Chemin du Petit Revoyet, 69921 Oullins Cedex, France

<sup>2</sup> Université de Lyon, Lyon, France

<sup>3</sup> Hospices Civils de Lyon, CHU Lyon Sud, Chirurgie Orthopédique et Traumatologique, 165 Chemin du Grand Revoyet, 69495 Pierre Benite Cedex, France



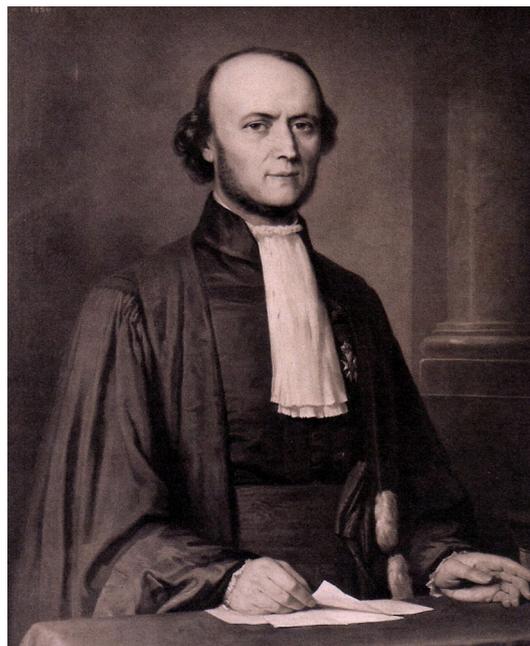
**Fig. 1** Marc-Antoine Petit

message that our own young students would still do well to hear. It was thanks to Petit's efforts that Lyon became the Secondary School of Medicine. Marc-Antoine Petit wanted to create a museum of anatomy in the Hôtel Dieu, to house his 200 dissection specimens, but that was not to come until 1798.

Another important figure of the nineteenth century was Surgeon Major Joseph Gensoul (1797–1868), who acquired an international reputation by resecting the maxillary bone, without anesthesia, on May 18, 1827. He was mentioned by Flaubert in "Madame Bovary". He is known to have practiced the procedure many times on cadavers to familiarize himself with the ten bone connections of the maxillary. The operation, with no anesthesia at that time, required dexterity and rapidity, whence this training, which developed into the concept of Operative Medicine, based on anatomical knowledge, repeating the surgical procedure many times.

### Joseph-Éléonor Petrequin (1809–1876)

In Lyon in 1844, Surgeon Major Joseph-Éléonor Petrequin (Fig. 2) published his "Traité d'Anatomie topographique médico-chirurgicale", one of the few such works at the time [5]. Amédée Bonnet and Léopold Ollier, the fathers of modern Orthopedic Surgery, introduced a new dimension to the Hôtel-Dieu, with Experimental Surgery; they had a perfect mastery of anatomy, as their books on surgical techniques go to show. The "Traité des Résections" is a medico-surgical



**Fig. 2** Joseph-Eleonor Petrequin

treatise in which detailed anatomical descriptions precede the specifications on operative technique.

Another notable nineteenth century figure was Etienne Desot, who, just a few months after X-rays had been discovered by Roentgen, took the first radiographs in Lyon, in Léopold Ollier's department; he laid the foundations of normal and pathologic osteoarticular radio-anatomy, set forth in several manuals. Henceforward, there would be in Lyon a fruitful collaboration between radiologists and anatomists, which continues to this day.

### Vincent Paulet (1828–1906): Titular Professor of Anatomy, 1877–1886

The Lyon Medical Faculty opened in 1877, and its first professor of Anatomy was Vincent Paulet, a surgeon from the Val-de-Grâce military hospital in Paris, appointed to the Charité hospital in Lyon. He published a "Traité d'Anatomie topographique comprenant les principales applications à la pathologie et à la médecine opératoire", with high-precision drawings executed by Jules Sarazin (1831–1906) [4]; this is now a very rare book, but one copy is still held in the laboratory. Teaching was facilitated by the abundant supply of unclaimed corpses in Lyon's hospitals, averaging 300 a year. The dissection room was vast, illuminated by stained-glass windows (Fig. 3).

**Fig. 3** Dissection room in 1877**Fig. 4** Léo Testut

### **Léo Testut (1849–1925): Titular Professor of Anatomy, 1886–1919**

Léo Testut (Fig. 4), qualified in Lille then applied to Lyon, where he was appointed Professor in 1886. He became the uncontested master of the Lyon anatomy school, and also well beyond, with his “*Traité d’Anatomie*” [6], published in 1889 by DOIN, a publisher with an international scope; the book spread throughout the French-speaking world, in seven editions in the lifetime of its four volumes. At

**Fig. 5** André Latarjet (on the right) performing a dissection with Albert Trillat

the time, his *Treatise* was in competition with another by Poirier and Charpy, a Parisian publication that was also of high quality; Testut’s book, however, had four-color plates, while Poirier’s were monochrome. Testut’s *Treatise* thus became the “*Bible of Anatomy*”: Anatomy is a science that is not only useful but also pleasing to the eye when properly understood.

### **André Latarjet (1877–1947): Titular Professor of Anatomy, 1919–1944**

André Latarjet (Fig. 5) succeeded Testut in 1919, sacrificing his own surgical career. He improved and transformed Testut’s book with very high-precision plates, in what became known as “*Testut-Latarjet*” [7]. In 1931, a new medical

school opened, named Rockefeller, where Latarjet continued his teaching and research until 1944, when Henry Gabrielle (1887–1968) took over from him, from 1944 to 1958.

Michel Latarjet (André's son) took over the laboratory from 1958 to 1971, followed by Alain Bouchet. In 1960, becoming an assistant in the Lyon laboratory of Pr Michel Latarjet and Pr Alain Bouchet [2] involved a competitive examination comprising theory, blackboard teaching, dissection and operative medicine.

In the 1960s, the French health-care system took charge of the burial of the bodies of the destitute that had hitherto constituted the supply of unclaimed cadavers used for teaching anatomy, and “body donation” was introduced in Lyon in 1968.

## Twentieth and twenty-first centuries (Fig. 6)

Anatomy teaching in the latter part of the twentieth century was given by renowned anatomists, surgeons and radiologists in the four Lyon medical faculties (now merged in the two Lyon Est and Lyon Sud Faculties):

- Lyon Nord: Pr Jean-Pierre Neidhardt and Dr Gonnon;
- Grange Blanche: Pr André Morin and Pr Louis-Paul Fischer<sup>†</sup>, succeeded by Pr Guillaume Herzberg;
- Alexis Carrel (renamed Laennec): Pr Alain Bouchet (with Michel-Henri Fessy as associate professor), succeeded by Pr Bernard Vallée;
- and Lyon Sud (Fig. 7): Pr Jacques Bejui, then Pr Jean-Paul Carret and Pr Patrick Mertens, succeeded by Pr



Fig. 7 Dissection room of the Lyon South Anatomy lab in 2019

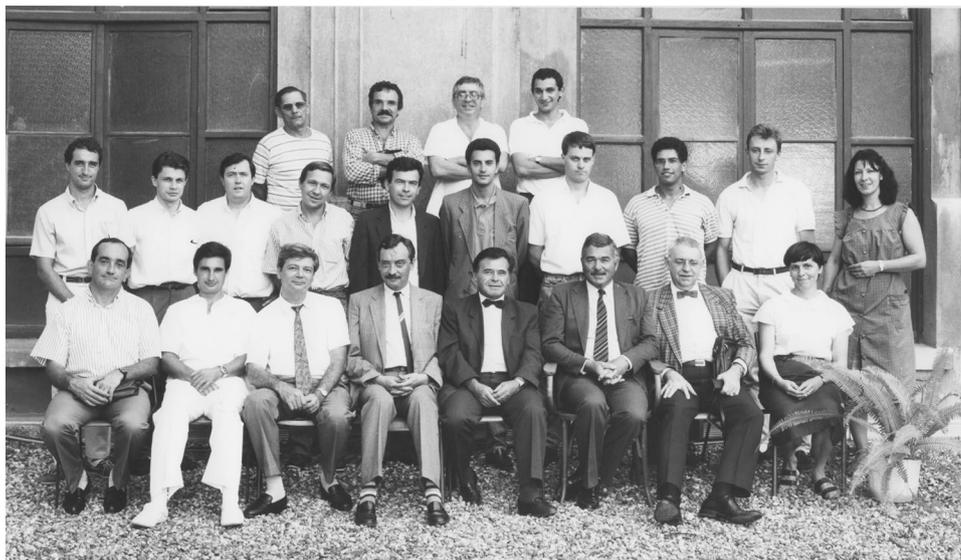
Michel-Henri Fessy, with Dr Anthony Viste as associate professor.

All of them taught clinical anatomy and practical anatomy in the service of everyday medicine: such is the heritage of the Hôtel Dieu and the enduring specificity of Lyon.

Anatomy has been the subject of various reforms in the university hospital system, and teaching had changed over the years, with new teaching methods and advances in imaging, surgical techniques and robotics, and will continue to progress as computerized navigation develops.

The science of anatomy is a modern discipline, oriented toward the future. Anatomy is not the science of the dead, but very much a science of life.

**Fig. 6** Members of the Anatomy laboratory in 1987. Sitting: Jean-Paul CARRET (3rd from the left), André MORIN (5th from the left), Alain BOUCHET (3rd from the right), Jean-Pierre NEIDHARDT (2nd from the right). 1st row standing: Patrick MERTENS (2nd from the left), Michel Henri FESSY (5th from the left)



**Author contributions** MHF: draft, review. JPC: draft, review. AV: draft, review.

### Compliance with ethical standards

**Conflict of interest** The authors declare that they have no competing interests.

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