

ANTONI DE GIMBERNAT I ARBOÇ GIMBERNAT LIGAMENT

The eponym

Gimbernat ligament. A band of fibrous tissue that fills the angle formed by the internal portion of the inguinal ligament with the pectineal line. It is merely the reflected portion of the aponeurosis of the external oblique muscle, which converts from vertical to horizontal or slightly rising. It is triangular and its outer edge is free, sharp, and crescent-shaped, forming the medial boundary of the femoral ring. Thus, it abuts Cloquet node and the femoral vessels¹. It is also known as the lacunar ligament².



Antoni de Gimbernat
i Arboç (1734-1816)

Antoni de Gimbernat i Arboç (1734-1816)

Antoni de Gimbernat i Arboç was born in Cambrils on 15 February 1734 and studied philosophy at *Universitat de Cervera*³. After completing his studies culminating in a Bachelor of Arts degree, he travelled to Cádiz in 1756 to continue training in the *Real Colegio de Cirugía de Cádiz* (college of surgeons) created by another Catalan, Pere Virgili⁴, though it seems he did not enter the College until 1758³. In Cádiz, Gimbernat proved to be especially talented in anatomy and dissection. He summarised this preference in one of his best-known declarations: “My favourite author is the corpse”.

Just three years after Gimbernat arrived in Cádiz, Virgili created a new surgeons' college in Barcelona at the *Hospital de la Santa Creu*. After holding several positions and graduating in 1762, Gimbernat was proposed for a professorship in Barcelona by Virgili. However, in Madrid, they opposed the appointment based on his youth. Nevertheless, the next year Virgili managed to have him appointed honorary professor and shortly afterward, supernumerary⁴. Two years later, Gimbernat obtained the position of professor of anatomy and was also appointed senior surgeon. During his time in Barcelona, he provided the first description of the anatomical element that would thenceforth be known as Gimbernat ligament (1768). Then in 1772, he described his technique for operating on a crural hernia, though publication of both contributions was delayed until 1793⁵.

In 1774, he was paid by the government of Carlos III of Spain to visit several European cities to gather knowledge on modern surgical practice, with the idea of creating a third college of surgeons, in Madrid. Gimbernat and Mariano Ribas, a professor from Cádiz, visited Paris (1774-1777), where they attended *Hôtel-Dieu* and *La Charité*, London (1777), Edinburgh, and Amsterdam (1778). In London, Gimbernat showed John Hunter his technique for operating on a femoral hernia:

Bust of Antoni de Gimbernat
in the *Reial Acadèmia de
Medicina de Catalunya*



"I am also encouraged to publish this new method by the approval of the wise and expert Dr Hunter, because when I was his listener in London at the time I mentioned, I explained it to him, after the lesson dealing with this hernia, demonstrating it in detail and with the possible clarity in his presence, before some of his disciples, on the same dry, well-prepared piece of a crural hernia, on which he had just been giving an exact demonstration with knowledgeable practical reflections. My satisfaction was enormous to see that, once I had concluded my demonstration, Hunter himself answered: 'You are right sir'. And he added: 'I will make this public in my lessons, and I will undertake it thus when I have the occasion to operate on a live patient'⁵."

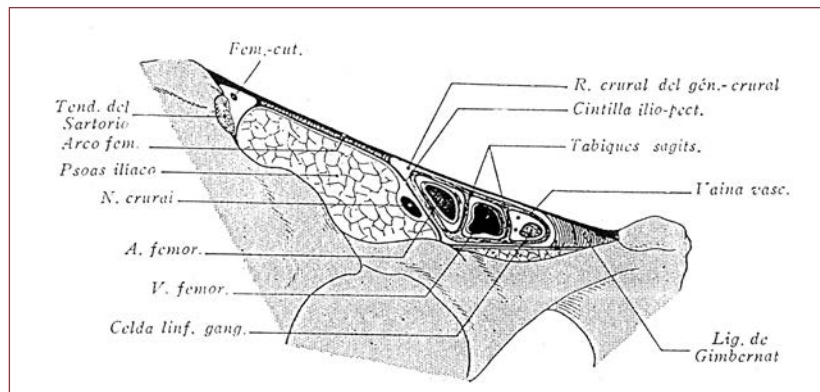
It seems that Hunter proposed that this technique should be known as Gimbernat operation (another eponym). Faithful to his word, Hunter publicised the Catalan surgeon's technique in his writings and conferences, and this was probably one of the keys to Gimbernat's immortality⁷.

Gimbernat ligament

Several French physicians recommended that the fibrous fold of the femoral canal should be known as Gimbernat ligament⁶. The author himself described it thus:

"From this it results that the crural arch has two sides, one external and rather rounded like a rope, thicker toward the pubis, and similar to a ligament. Therefore, they call it the Fallopien ligament; to it adheres the expansion of the fascia lata as has been said, and in very thin patients the direction and tension of this cord can be seen through the teguments. The other side, which I have called internal, is the end of the fold of the aponeurosis: it is very thin; and from the start it joins the aponeurosis that covers the iliac muscle. This close

Transversal slice
of the femoral arch
showing the
constitution of
the femoral ring,
especially Gimbernat
ligament⁶

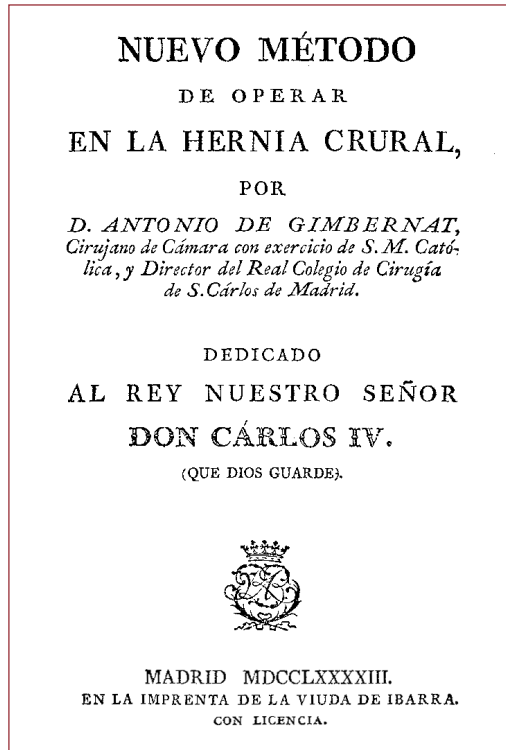


junction and that of the fascia lata with the external edge are more notable from the anterior superior iliac spine to near the crural vessels, resulting in the crural arch being flatter and depressed against the iliac muscle throughout this course, acting as a girdle to support the muscle and hold it in place during its contractions. Consequently, it is impossible that a crural hernia could ever form in this space, as some have thought⁵.”

These were not Gimbernat’s only discoveries, since he also described the node that would later be known as Cloquet or Rosenmüller node⁴, although it is still known as Gimbernat node⁷. For some authors⁶, Gimbernat should also be credited with the discovery of the septum crurale, which is also usually attributed to Cloquet, or with the discovery of the ligaments known as Cooper ligaments.

Other activities

Gimbernat’s efforts in favour of creating the *Colegio de Cirugía de San Carlos* in Madrid were recognised by his appointment as its director³. Only two years later, however, he was appointed royal surgeon and had to withdraw from his teaching duties. In 1799, he managed to unify the colleges of medicine and surgery, but in practice, the protests of the medical professionals hindered this merger³. In 1801, Gimbernat was appointed First Royal Surgeon, thus becoming the president of all the surgeons’ colleges in Spain. Despite most of his time then being occupied with management tasks, he still published *Disertación sobre las úlceras oculares que afectan a la córnea transparente* (Dissertation on the eye ulcers affecting the transparent cornea) (1802). Gimbernat’s dedication to these organisations continued in the following years, when the faculties of medicine and pharmacy as well as the surgeons’ colleges, were forced to merge under Napoleonic administration in 1811 into a single organism, the *Consejo Superior de Salud Pública*, which Gimbernat



Cover of Antoni de Gimbernat's
most important work⁵,
*Nuevo método de operar en la
hernia crural* (A new method
of operating the crural hernia),
published in 1793

presided over, though he felt now old and sick. His progressive loss of sight had made a surgical operation advisable, and he was operated on by Josep Ribes in 1810⁸. This was complicated when Gimbernat, who now suffered bouts of mental instability, removed the bandages on the night of the operation to check whether he could see, and finally lost his sight in the eye that had been operated upon⁹.

The ensuing years were increasingly worse, since he was relegated to a lesser role by Fernando VII's new government, probably due to his collaboration with the Napoleonic government. When he was 80 years

old, Gimbernat abandoned all public life³. His physical condition continued to deteriorate. He became increasingly blind and his moments of lucidity became less frequent⁹. He finally passed away in Madrid in the early hours of 17 November 1816.

Gimbernat contributed notably to the development of surgery by introducing new techniques and instruments, as well as through his anatomical discoveries and proposals for the organisation of surgery studies. Gimbernat ligament is probably one of the best-known Catalan medical eponyms.

References

1. Casassas O, director. Diccionari enciclopèdic de medicina. Barcelona: Acadèmia de Ciències Mèdiques de Catalunya i de Balears, Enciclopèdia Catalana; 1990. p. 895.
2. Dorland's illustrated medical dictionary. 27th ed. Philadelphia: WB Saunders; 1988. p. 690, 931.
3. Ferrer D. Noticia sobre la vida y la obra de Antonio de Gimbernat. Medicina e Historia. 1964;IV:1-15.
4. Puig-La Calle J, Martí-Pujol R. Antonio de Gimbernat (1734-1816). Anatomist and surgeon. Arch Surg. 1995; 130:1017-20.
5. Gimbernat A. Nuevo método de operar en la hernia crural. Madrid: Imprenta de la Vda. de Ibarra; 1793.
6. Salcedo E. Obras de Don Antonio de Gimbernat. Madrid: Imprenta de Cosano; 1926-1927.
7. Graham H. Historia de la cirugía. Barcelona: Iberia-Joaquín Gil; 1942.
8. Vázquez-Quevedo F. La cirugía en España. Madrid: Iatros Ediciones; 1994. p. 45-50.
9. Gimbernat A. Sucinta historia del Dr. D Antonio de Gimbernat. Barcelona: Imprenta de Sierra y Martí; 1828.

Further reading

- Arraez-Aybar L, Bueno-Pérez J. Antonio Gimbernat y Arbós: An anatomist-surgeon of the Enlightenment (in the 220th anniversary of his "a new method of operating the crural hernia"). *Clin Anat.* 2013;26(7):800-9.
- Arrechaga Martínez J. Biografía científica de Antonio Gimbernat. *Medicina e Historia*, 1977;66:1-16.
- Freixas-Freixas J. Biografía d'Antoni Gimbernat. *Butlletí del Sindicat de Metges de Catalunya.* 1927;86:8-13.
- Llagostera y Sala F. Reseña biográfica del Sr. D. Antonio de Gimbernat, redactada por encargo de la Academia de Medicina y Cirugía de Barcelona y leída en la sesión pública que el Excmo. Ayuntamiento celebró el 29 de setiembre de 1879 en el Salón de Ciento de las casas consistoriales, para colocar su retrato en la Galería de catalanes ilustres por Francisco Llagostera y Sala. Barcelona: Imprenta de Jaime Jepús; 1880.
- Loukas M, El-Sedfy A, Tubbs RS, Linganna S, Salter EG, Jordan R. Gimbernat y Arbós, Antonio de (1734-1816). *World J Surg.* 2007;31:855-7.
- Matheson NM. Antonio de Gimbernat, 1734-1816. *Proc R Soc Med.* 1949;42:407-10.
- Mestres-Ventura P, ed. Honoring Don Antonio de Gimbernat Anatomist and Surgeon (1734-1816). *Eur J Anat.* 2016;20(Suppl. 1):9-102.
- Pérez N. El Hospital General de Santa Creu frente al Real Colegio de Cirugía de Barcelona: la controversia surgida en torno al suministro de cadáveres para el anfiteatro anatómico de Gimbernat. *Palau-solità i Plegamans: Fundació Uriach* 1838; 2004.
- Pi-Sunyer Bayo J. Antoni Gimbernat. Fundador de Col·legi de Cirurgia de San Carlos. Actes IX Congrés de Metges i Biòlegs de Llengua Catalana a Perpinyà. *Societat de Cirurgia de Catalunya.* 1936;1:64-151.
- Rueda Pérez JM. Vida y obra de Antonio Gimbernat. *Med Militar.* 1994;50:98-100.
- Rueda Pérez JM. Contribuciones de Don Antonio Gimbernat a la anatomía y cirugía de la pared abdominal y a la enseñanza de la cirugía en España. *Rev Hispanoam Hernia.* 2013;1(4):171-5.
- Salcedo-Ginestal E. Obras de Don Antonio de Gimbernat, precedidas de un estudio bibliográfico del mismo. 2 Vol. Madrid: Real Academia Nacional de Medicina. Biblioteca Clásica de Medicina Española; 1926.
- Zaragoza Rubira JR. Dos aspectos poco conocidos del trabajo de Antonio Gimbernat. *Med Esp.* 1963;49:46-61.