Baron Guillaume Dupuytren (1777-1835): One of the Most Outstanding Surgeons of 19th Century

Editorial

G. Androutsos, M. Karamanou, A. Kostakis

Received 17/06/2011 Accepted 21/07/2011

Abstract

Baron Guillaume Dupuytren is considered to be a leading figure of surgery. Domineering and unforgiving to those who were an obstacle in his career, he was unrivalled as a teacher and respected as an excellent surgeon. Regarded as the greatest surgeon of the 19th century, he introduced the anatomo-clinical method in surgery.

Key words:

Dupuytren, Eminent surgeon, Dupuytren's disease, Anatomo-clinic method

Life-studies

Guillaume Dupuytren was born in the village of Pierre-Bouffière, the son of a constantly struggling lawyer (Fig.1). His eventful life began at the age of three when he was kidnapped by a lady who thought him charming and whisked him off in her carriage. At seven, he ran away from home, but was soon brought back and punished. Shortly afterward, a troop of hussars came along, fell under his spell and, surprisingly, got permission to take him with them to Paris. He studied Humanities at the Magnac-Laval College, then at the Marche in Paris (1789). At the end of his studies (1793), he wanted to become a soldier. However, his father objected and forced him to enroll at the Medical-Surgical School of the St. Alexis Hospital in Limoges with the authoritarian injunction that he would become a surgeon. Dupuytren accepted his father's wishes but decided to pursue his education in Paris.

One of the founders of the medical society of emulation in 1796, in 1803 he founded the Anatomical Society. Upon his death, he left an endowment of

200,000 francs and also collections so that a museum of pathological anatomy could be established at the Faculty of medicine, the museum which today bears his name. He also made an important bequest that the faculty create a chair of pathological anatomy for his friend and disciple Cruveilhier.

Fig. 1 The eminent surgeon Guillaume Dupuytren (1778-1835)

He was appointed hereditary baron by Louis XVIII (1820). A member of the Safety Council, he was elected member of the Academy of Medicine on the section of surgery in 1820, and was chairman by 1824. He also became a member of the Academy of Sciences' in 1825, replacing Percy and Officer of the Legion of Honour.

On March 21, 1810, he married Geneviève Lambert de Saint-Olive in Paris, from whom he separated in 1826. They had a daughter Adeline Geneviève.

He died on February 8, 1835. The autopsy confirmed the expected lesions of cerebral infarction, bilateral tuberculous pleurisy which were incurable at the time, as well as kidney stones [1].

Career

In Paris, he followed the courses of Jean-Nicolas

G. Androutsos, M. Karamanou (Corresponding author)
- History of Medicine department, Medical school, University of Athens, Greece
A. Kostakis, President of Hellenic Surgical Society
- Biomedical Research Foundation, Academy of Athens, Greece
✉ e-mail: mariannakaramanou@yahoo.com

Corvisart (1755-1821), Alexis Boyer (1760-1833), Philippe Pinel (1745-1826) and Georges Cuvier (1769-1832). In 1795, he was named prosector at the school of medicine in Paris and also gave private lessons of anatomy and physiology to increase his financial resources. Thereafter, he was to undertake several other positions - 1801: Chief of the anatomy department; 1803: Second surgeon at the Hôtel-Dieu hospital; 1808: Chief surgeon assistant of Hôtel-Dieu hospital; 1809: General inspector for higher education in medicine; 1812: Professor of Surgery at Hôtel-Dieu hospital, replacing Raphaël-Bienvenu Sabatier (1732-1811). From the moment he is appointed professor, he is on equal footing with Philippe Pelletan (1745-1829) and as such, he does everything in his power to make Pelletan's life difficult and take his place as chief surgeon of the Hôtel-Dieu hospital. He publicly demonstrates the inadequacy of his former master and discredits him to his students, obliging Pelletan to concede his place in 1815. However, he has such a need to dominate that he cannot even suffer the presence of other surgeons with him and forces his two assistants, Jean-Nicolas Marjolin (1780-1850) and Thevenot of St. Blaise, to withdraw and leave him a free rein. In 1823, he is appointed a baron by Louis XVIII after becoming his personal surgeon; He retains this function during the reign of Charles X (1757-1836). In 1835, it is Philibert-Joseph Roux (1780-1854) who succeeded him in the Hôtel-Dieu hospital [2].

His contributions to surgery and medicine

Dupuytren is eponymously associated with:

- 1) *Dupuytren's abscess* (Syn. *iliac phlegmon*): Phlegmonous collection of small basin located in the virtual space between the muscle sheaths and the peritoneal serous of the iliac fossa.
- 2) *Dupuytren's amputation* (Syn. *Lisfranc's amputation*): Amputation of the arm at the shoulder joint.
- 3) *Dupuytren's splint*: a) Splint for immobilization of Dupuytren's fracture of fibula. b) splint for immobilization of a fractured wrist.
- 4) *Dupuytren's cannula*: Metal cannula covered with gauze, attached to a circular groove in one extremity; it is used for drainage of urine in cystostomy or haemostasis.
- 5) *Dupuytren's classification*: Classification of burns into six degrees of increasing severity: skin redness, blisters, partial destruction of the skin, total destruction of the skin, charring of muscles; charring of the bone. He was the first to classify burns systematically, using six degrees rather than three as we currently do.

His concern with burns also led to new plastic surgery for repairing skin defects and scars.

6) *Dupuytren's contracture* (*Dupuytren's disease*) the term given to a fibrous condition of the palms, often found in older men, for which he devised an operation.

7) *Dupuytren's fibrous body amputation* (Syn. *fibrous ameloblastoma*): Simple solid ameloblastoma, with fibrous appearance.

8) *Dupuytren's enterotome*: consisted of two blades which could be disarticulated for insertion into the bowel and used for the treatment of artificial anus.

9) *Dupuytren's spur* (Syn. *promontorium of Scarpa*): partition separating the two intestinal orifices in an artificial anus, formed by the projection of the deep wall of the intestinal loop bent at an acute angle to the skin and anastomosed. It is created to ensure a complete derivation of the faeces, but can sometimes be complicated by the gradual constitution of a cavity.

10) *Dupuytren's fascia* (Palmar aponeurosis).

11) *Dupuytren's fracture* (Syn. *Pott's fracture-Anglo-saxon term*): Fracture of the instep by abduction, breaking both ankles (possibly including a third fracture of the posterior tibial margin), causing an outward and backward swerve of the foot compared to the axis of the leg. A better way of handling fractures enabled him to achieve amazing results: he once reported that after receiving his extension treatment, 200 of 207 cases with "Pott's fracture" made a complete recovery.

12) *Dupuytren's Hydrocele*: Bilocular hydrocele of the tunicae vaginalis (perididymis). A bilocular hydrocele in which the sac fills the scrotum and also extends into the abdominal cavity beneath the peritoneum.

13) *Dupuytren's disease* (Syn. *Dupuytren's contracture*): Disease of unknown aetiology, characterized by a retractile sclerosis of the palmar fascia, starting with palmar nodules and usually affecting both hands. Very common and difficult to treat, this disease may be associated with cervical arthritis (cervical spondylosis).

14) *Dupuytren's Operation*: a) Surgical technique for the correction of congenital absence of the vagina, with a broad and deep, rectovesical cleavage to the Douglas pouch and the introduction of a cylindrical mandrin which is left there permanently. b) Subcutaneous tenotomy of the sternal head of the sternocleidomastoid muscle.

15) *Dupuytren's Paste*: Paste made of arsenic trioxide, gum and mercurous chloride once used as a caustic agent.

16) *Dupuytren's Phlegmon*: Diffuse neck abscess, described by Dupuytren, in 1833 (obsolete term).

17) *Dupuytren's Pills*: Pill containing 1 cg of mercur-

rous chloride and 2 cg of opium extract, once used in the treatment of syphilis.

18) *Dupuytren Sign*: a) movement of the head of the femur upon pulling on the leg, with shortening of the leg during its repression from the bottom up, caused to the infant lying on its back, and return to a normal length with the traction of the member. This sign indicates an abnormal laxity of the articular capsule in congenital dislocation of the hip. b) Creaking perceived from the pressure on a sarcomatous bone. (A clinical sign in which there is free up-and-down movement of the head of the femur when traction is applied to it in cases of congenital dislocation, and a crackling sensation on pressure over the bone in certain cases of sarcoma).

19) *Dupuytren's Tourniquet*: Metal device once used to cause compression on the abdominal aorta [3] (Fig.2).

His scientific works

In 1803, he presented his doctoral thesis which he dedicated to his master, Alexis Boyer. It was titled "Propositions on several aspects of anatomy, physiology and pathological anatomy" (Propositions sur quelques points d'anatomie, de physiologie et d'anatomie pathologique). In 1802, he published the work "Lectures on Clinical Surgery, delivered at the Hôtel-Dieu of Paris" ("Leçons orales de clinique chirurgicale faites à l'Hôtel-Dieu de Paris") [4].

In 1811, after Sabatier's death, he participated in a contest to obtain the chair of surgery with the thesis Lithotomy. [5]. In 1816, he published "Memoir and organizational plan for medicine and surgery." ("Mémoire et plan d'organisation pour la médecine et la chirurgie") [6] followed In 1819 by the "Memoir on the fracture of the lower extremity of the fibula, resulting in dislocations and injuries" ("Mémoire sur la fracture de l'extrémité inférieure du péroné, les luxations et les accidents qui en sont la suite") [7].

In 1820, he wrote the "Statement made on March 25, 1820, in the House of Peers on the events of the night of February 13 to 14" ("Déposition faite le 25 mars 1820 à la Chambre des pairs sur les événements de la nuit du 13 au 14 février") [2].

In 1828, he published the "Memoir on a new method of treating accidental anus" ("Mémoire sur une nouvelle méthode de traiter les anus accidentels"). In 1830, he also published the paper "A Theoretical and Practical Treatise on Injuries by weapons of war" ("Traité théorique et pratique des blessures par armes de guerre") in which he mainly reflected his experience of the riots of 1830 [8].

In 1833, he published the essay "On hernia strangulation" ("Sur les étranglements des hernies par le collet du sac") [9].

A giant of surgery with a special character

On September 9, 1815, when Dupuytren was appointed chief surgeon of the Hôtel-Dieu hospital, he asked "that the processing be kept by Pelletan, his old master", to be continued until his death, in 1829. Etienne Pariset said in his eulogy: "However, when he appeared alone on the ruins of Pelletan, on the ashes of Bichat and Desault, a feeling of surprise, mixed with anxiety and suspicion seized all minds" [10]. According to J. Lisfranc and a story recalled by J.F. Malgaigne, Dupuytren said then: "Congratulate me. This is the post I have been working toward for twenty years, and no-one has the power to take it away from me. I am Chief surgeon at the Hôtel-Dieu" [11].

At the age of 38 years, he was to create a school according to his standards: a steady and quick hand serving a bold but not imprudent mind in applying an anatomico-clinical concept. According to Antoine Dubois: "He was tall, had reserved posture, a distinguishing head, a high forehead framed by beautiful hair, two ardently, deeply sparkling black eyes, reflecting the overall intelligence, insight and will-power. Brief and precise speech, refined language, steadfast character, sovereign authority, all met to ensure the triumph of his single passion: surgery."

Way ahead of his time, before the Pasteur era, before knowing the existence of microorganisms, Dupuytren conceived the risk of nosocomial infection, imposing strict rules of spotless hygiene during his service. The clothes worn were white, and were changed after the slightest stain. He knew that "an operation places the living factor in debility conditions that dispose the patient to contract all diseases" [12].

The course of Dupuytren's day was immutably the same, including holidays... two centuries before the law of 35 hours! He would wake up, at about 4 a.m whatever the season, and leave home at 5 a.m., walking to Hôtel-Dieu hospital, where his arrival was announced by a bell, the warning signal to enter battle. After leaving his coat and wearing a big white apron reaching his armpits, he would go to the Sainte Agnès room at around 6 a.m., where he would call in everybody, interns and externs, since he imposed very strict discipline. During the ward rounds, which lasted three hours, each patient was examined in his bed by the chief who also applied some special dressings. Subsequently, a clinic lecture was held at 9.30 a.m. in the amphitheatre concerning one of the patients seen during the ward rounds. Dupuytren attached great importance to two records which he would check frequently: the observation and the autopsy reports. At the end

of the lecture, circumstances permitting, he would perform one or two operations which, at that time, were simple and quick. He dedicated the end of the morning to general and free consultation, open to anyone who wanted to know the opinion of the chief. At around 11 a.m., putting his city clothes back on, “a shabby green coat, bad hat, socks falling to the heels”, he walked home where he would eat a bun [13]. At home, he offered private consultation and then went to the faculty or operated on a few rare patients in the city.

At 6 p.m., he was back at his post at the Hôtel-Dieu hospital, to examine the operated patients of that day a second time, or to deal with emergencies and “study the records of the observations, which he completed and corrected himself” [14].

Totally dedicated to his surgical practice and teaching, without any worldly concern or cause for intrigue, Dupuytren who had lived through the battles of the Revolution, Consulate and Empire, was similarly discharged of his office during the Hundred Days, the Restoration and the July Monarchy. In 1820, during the founding of the Royal Academy of Medicine, Louis XVIII named him holder in the section of surgery and charged him with the responsibility of setting up this new institution. On the death of Louis XVIII, Dupuytren attended his autopsy and also his embalming. On April 4, 1825, upon the death of Baron Pierre-François Percy (1754-1825), he was elected a member of the Institute of France. During the three days of riots in July 1830, he was at his post at the centre of agitation, an asylum for insurgents, to which he denied access of the police. He struck again on 5 and 6 June 1832 during the riots for the funeral of General Lamarque, stating: “Since I am committed to the hospitals of Paris, under the Republic, the Empire or the Restoration... I do not know any insurgents in my room, I see only wounded, for whom I am solely responsible” [15].

The exemplary nature of his daily practice proved the best education for his students, particularly liked by the American visitors. The wealth of documents accumulated at the Hôtel-Dieu hospital and his didactic intellect, in fact compelled him to publish papers on the anatomo-clinical and therapeutic aspects of surgical affections.

He first proposed the idea for ligation of the subclavian artery in 1810, which unfortunately was prohibited by his master, Pelletan. A letter, written on March 24, 1813 by Professor Jacques-Mathieu Delpech of Montpellier (1777-1832), is significant: “What has happened to your carotid artery aneurysm? Will you perform the operation?” It would be a good thing, but do not sacrifice anything to your

fame. Make sure of the chances of the operation. Your reputation is as equally important to me as mine, and your success will offer to me the greatest satisfaction”. This innovative ambition probably incited jealous detractors as proves the letter of Bouchet de Lyon, of August 13, 1813: “You are, my dear friend, too far above the others now to find francs and loyal friends in the capital. I firmly believe that Delpech and I are the most suitable... Everyone in this association will give his essence, you the genius, Delpech the science and me the activity, the facts that will take place before my eyes”. [16].

Fig. 2 Dupuytren's surgical instruments

Fig. 3 Dupuytren demonstrating to the king Charles X the results of a cataract operation

With his innovation and prescience, Dupuytren was able to contribute to the progress of surgery, by analyzing the benefits of pathological anatomy and physiopathology. He is credited with requesting that his fellow student Jean Cruveilhier help in this field (1791-1874), as he alleviated his other assistant Gilbert Breschet (1783-1845). Thus, surgical art was committed to science.

He was revered by his students as evidenced by the speech of Antoine Royer-Collard (1768-1845) at his grave at Père Lachaise cemetery, which also created dissension: "Sadly his career has been very rough. He could at least receive the gracious justice that we too often denied in his lifetime". He was admired by many chiefs of surgical schools who testified their respect on his ultimate trip to Italy in 1834, during a trip to London, in 1826, or under the authority of Astley-Cooper (1768 - 1841), when he was welcomed as "Prince of European surgery". However, he was surprised and somewhat humbled by the immense fortune of the English surgeon [17].

His generosity to the poor and his letter written to Charles X in 1830, while in exile, attest to his liberality: "Sir, partly thanks to your kindness, I have three million francs. So, I offer to you one, the second is intended for my daughter and I keep the third for my old age". Charles X refused the offer and expressed his regret for not having appointed him Peer of France. It is also worth recalling the royal visit to the Hôtel-Dieu: In 1824, Dupuytren presents to Charles X a successfully operated patient for cataract (Fig.3).

In his will, he demonstrated his desire to befriend and to help others. After leaving the bulk of his estate to his children at Beaumont (an inheritance estimated at seven million francs), he donated two hundred thousand francs to create a chair of pathological anatomy in Paris, stipulating that the first holder would be Jean Cruveilhier. This chair was indeed created but, at the instigation of Doyen Orfila, this legacy was served on the Couvent des Cordeliers, a museum of pathological anatomy that is still in place today and which bears the name of Dupuytren. In addition, he bequeathed fifty thousand francs to the town of Pierre Buffière for the creation of a monumental fountain called Adeline. Obviously, no one can accuse Dupuytren of avarice or greed, whose fortune was made despite himself, thanks to the personal management of the banker James de Rothschild, in recognition of care received for a serious head injury, early on in his practice as a young surgeon [18].

Discussion

As professor of surgery in the Faculty of Medicine, Dupuytren was acknowledged as an outstanding teacher of his generation. Despite all his achievements and the recognition they brought him, he remained austere, arrogant, cold, and calculating. Dupuytren had an enormous practice that made him one of the wealthiest medical men in France. He was a magnificent teacher, a dazzling wound care tech-

nician and an eloquent lecturer. Bloated with pride and arrogance, he earned the reputation of being "the greatest of surgeons and the smallest of human beings". When he died at 57, he had advanced surgery on many frontiers, but nobody mourned him.

Conclusion

Shortly after the Dupuytren's death, the head of English surgery Sir Astley Cooper (1768-1841), wrote a letter ending thus: "Surgery will never cease to rank you among those who have been the glory of this profession"

Conflict of interest

The authors declare that they have no conflict of interest.

References

1. Rutkow I. Surgery. An Illustrated History. Saint Louis, Missouri, USA : Mosby ; 1993. pp. 412-413.
2. Huguet F. Les professeurs de la faculté de médecine de Paris. Paris: Éditions du CNRS ; 1991. pp. 173-176.
3. Manuila A et al. Dictionnaire français de médecine et de biologie en quatre volumes. Paris : Masson ; 1972.
4. Dupuytren G. Leçons orales de clinique chirurgicale faites à l'Hôtel-Dieu de Paris. Recueillies et publiées par une société de médecins. Paris : J.-B. Baillière ; 1832
5. Dupuytren G. Lithotomie. Paris : Lebègue ; 1811. p.54
6. Dupuytren G. Mémoire et plan d'organisation pour la médecine et la chirurgie. Paris : Didot ; 1816.
7. Dupuytren G. Mémoire sur la fracture de l'extrémité inférieure du péroné, les luxations et les accidents qui en sont la suite. In : Annuaire médico-chirurgical des hôpitaux et hospices de Paris. Paris, 1819.
8. Dupuytren G. Mémoire sur une nouvelle méthode de traiter les anus accidentels. Mémoires de l'Académie de médecine 1828 ; 1 : 259.
9. Dupuytren G. Sur les étranglements des hernies par le collet du sac. Paris ; 1833
10. Pariset E. Éloge du baron G. Dupuytren, lu à la séance publique annuelle du 9 août 1836. In : Histoire des membres de l'Académie royale de médecine. Paris ; 1850
11. Malgaigne JF. Dupuytren. In : Nouvelle biographie générale. Paris :Firmin Didot frères ; 1856. p. 386.
12. Delhoume L. Dupuytren. Paris : Baillière et Fils ; 1935.
13. Du Châtenet E. Les savants célèbres. Limoges : Ardant ; 1890. pp. 72-92.
14. Busquet P. Les Biographies médicales. Paris : J.-B. Baillière ; 1929
15. Gosset A. Cérémonie du centenaire de la mort de Dupuytren. Paris : Gauthier-Villars ; 1937. p. 15
16. Rochard J. Histoire de la chirurgie française au XIXe siècle. Paris : J.-B. Baillière et Fils ; 1875. pp. 154-162.
17. Mondor H. Guillaume Dupuytren. In : Anatomistes et chirurgiens. Paris :Fragrange ; 1949. pp. 261-320.
18. Vayre P. De l'Art à la science en chirurgie. Trois Limousins à Paris au XIXe siècle : Alexis Boyer (1757-1833), Guillaume Dupuytren (1777-1835), Jean Cruveilhier (1791-1874). Paris : Glyphe & Bioterm éditions ; 2004. pp. 47-88.

Baron Guillaume Dupuytren (1777-1835): Ένας Από τους Πλέον Εξέχοντες Χειρουργούς του 19ου Αιώνα

Editorial

Γ. Ανδρούτσος, Μ. Καραμάνου, Α. Κωστάκης

Περίληψη

Ο Guillaume Dupuytren γεννήθηκε το 1777 στη Limousin της Γαλλίας. Σπούδασε στο Παρίσι, όπου υπήρξε μαθητής των Jean-Nicolas Corvisart, Pierre Desault και Xavier Bichat. Διαδέχτηκε τον Desault στο Hôtel-Dieu των Παρισίων και διατέλεσε προσωπικός χειρουργός των δύο γάλλων βασιλέων, Λουδοβίκου 18ου και Καρόλου 10ου. Αυταρχικός και αμείλικτος προς όσους απετέλεσαν εμπόδιο στη σταδιοδρομία του, υπήρξε ασυναγώνιστος διδάσκαλος και σοβαρός αλλά ριψοκίνδυνος χειρουργός. Το 1826, δημοσίευσε το Répertoire général d'Anatomie (Γενικός κατάλογος Ανατομίας). Το 1831, περιέγραψε τη νόσο που φέρει το όνομά του στο έργο *De la rétraction des doigts par suite d'une affection de l'aponévrose palmaire et l'opération chirurgicale qui convient dans ce cas* (Περί της συσπάσεως των δακτύλων ως επιπλοκή μιας παθήσεως της παλαμιαίας απονευρώσεως και της χειρουργικής επεμβάσεως που ενδείκνυται σε αυτή την περίπτωση). Η χειρουργική θεραπεία που πρότεινε δεν έχει καθόλου αλλάξει μέχρι σήμερα. Επινόησε τον τεχνητό πρωκτό και τη θεραπεία του δακρυορινικού συριγγίου. Το όνομά του δόθηκε σε νάρθηκα, σε δύο τύπους καταγμάτων, σε ένα από τα δύο σφυρά και σε ουροσυλλέκτη προσκολλόμενο μετά από εγχειρήσεις κυστεοστομίας. Είναι γνωστό επίσης το «σημείο του Dupuytren» που επιτρέπει την αναζήτηση της αρθρικής υπερχαλαρώσεως του ισχίου στο βρέφος. Η άμετρη φιλοδοξία του και ο μισαλλόδοξος χαρακτήρας του, τον έφεραν σε ρήξεις με συναδέλφους του και κυρίως με τον François Broussais ο οποίος είχε τα ίδια ελαττώματα. Τελικά, ο Dupuytren αναγνωρίζοντας την αξία του Broussais, πριν πεθάνει, το 1835, του εμπιστεύθηκε το σώμα του για να το νεκροτομήσει. Ο αρχιχειρουργός του Ναπολέοντα Pierre-François Percy (1754-1825) χαρακτήρισε τον Dupuytren ως «τον καλύτερο των χειρουργών αλλά τον χειρότερο των ανθρώπων». Θεωρείται ως ο μεγαλύτερος χειρουργός των αρχών

του 19ου αιώνα και ως εκείνος που εισήγαγε την ανατομοκλινική μέθοδο στη χειρουργική.

Λέξεις κλειδιά

Dupuytren, Νόσος Dupuytren, Ανατομοκλινική μέθοδος