

A neurologist in the origin of European and International neurosurgery: Clovis-Julien-Désiré Vincent (1879-1947)

G. Androutsos¹, M. Karamanou¹, M. Lymberi², T. Zambelis³, E. Stamboulis³

¹History of Medicine Department, Medical school, University of Athens, Greece

²Experimental Physiology Department, Medical school, University of Athens, Greece

³Department of Neurology, Aeginition Hospital, Medical school, University of Athens, Athens, Greece

Rezumat

Un neurolog la originea neurochirurgiei europene și internaționale: Clovis-Julien-Desire Vincent (1879-1947)

Vincent Clovis a început cariera sa ca neurolog și în final a devenit neurochirurg la o vârstă înaintată. El este considerat formatorul neurochirurgiei franceze și după Harvey Williams Cushing, primul neurochirurg european. El a fost interesat mai ales de tumorile pituitare, abcesele cerebrale și edemul cerebral.

Cuvinte cheie: Clovis Vincent, Joseph Babinski, neurologie, neurochirurgie

Abstract

Vincent Clovis began his carrier as a neurologist and finally became neurosurgeon at an advanced age. He is considered the founder of French neurosurgery, and after Harvey Williams Cushing, the Europe's first neurosurgeon. He was mainly

interested in pituitary tumors, in cerebral abscesses and in cerebral oedema.

Key words: Clovis Vincent, Joseph Babinski, neurology, neurosurgery

His life and carrier

He was born at Ingré on September 26, 1879. His father, Laurent-Frederick, was a doctor, as well as his grandfather. Vincent's spirit of independence as a teenager was already manifested, since high school of Orléans, when he gives the impression of protester from his very outset. But when at the end of school his illness kept him at home, he suddenly imposed, spontaneously, a rule of strict work. Helped only by a few correspondence courses, the previously mediocre student had perfectly prepared for his bachelor's degrees.

During his medical studies in Paris, he had also a revealing behavior. Attentive disciple, Vincent quickly discerned the tutors whose teaching would be beneficial; he drew out eagerly from their knowledges the necessary elements for his education, without being submitted to their influence though. His willingness beamed so intensively that imposed on everyone in each and every occasion (1).

During his years of internship he was student of dermatologists and neurologists: Auguste-Louis Queyrat (1856-1933), Achille-Alexandre Souques (1860-1944), Joseph Babinski

Corresponding author:

Marianna Karamanou M.D.
4 str. Themidos, 14564, Kifissia, Athens,
Greece
Tel: +30 6973606804, Fax: +30 2108235710
E-mail: mariannakaramanou@yahoo.com

(1857-1932) Jean Nageotte (1866-1944), Georges Thibierge (1859-1926), Fulgence Raymond (1842-1910) and Henri-Charles-Jules Claude (1869-1946). But they were too many masters for him. He had to choose. So, he chose neurology. In Babinski, especially, he found what suited him: observation, silence, patience, slowness or a scruple of expression that seemed to add to meditation and authenticity (2).

In 1909, after a competition he took the gold medal for internship. He spends the additional year of internship earned by the the gold medal, with two great professors, Marie-Émile-Anatole Chauffard (1855-1932) and Georges-Charles Guillaumin (1876-1961), while he sacrificed part of his time to complete his outstanding doctoral thesis: Chronic syphilitic meningitis. The nerve damage of the brain (1910) (3). Like Jean-Nicolas Corvisart (1855-1821) and Théophile-René Laennec (1781-1826), he worked with perseverance to educate the sense of information, he learned to listen, watch, see, feel, waiting for a sign of a reflex, observe the respiratory modalities, the stages of a coma, the most tenuous differences of consciousness. In 1913 he was appointed hospital physician (2).

In 1914, at his request, he was assigned to an infantry battalion. At the end of 1916, he deliberately left the Neurological Center in Tours to return to the front, and received the Legion of Honor as physician to the 46th infantry regiment. The war had to offer to Vincent several opportunities to show some originality in both behavioral and admirable virtues. In the post of neurologist, he would be as original and brave as he was at the front, and particularly rough against cheaters. Trained before the war to detect hystericals, disease simulators, he thought he discovered a large number of rogues who imitated the symptoms, stood resolutely away from the fighting, filling the hospitals of the rear. Vincent could not tolerate this hideous spectacle. He invented a method of electric shock with which he hoped to distinguish the real from the fake sick. This initiative, inspired by patriotism and exemplary loyalty, but perhaps with little concern for chariness, raised strong protests. Much criticism raised against the person who was seeking to protect the good soldiers against the guile of the bad ones, and who refused to permit the deceiving of the honest people by the crooks, when the gathering of all the forces of the country seemed necessary. Vincent, with his little harsh but harmless method, came gradually to make valid many soldiers in the battle formations, considered until that moment as unfit, by ignorance or complicity. He didn't seek to reach to the sources of hysteria, because, in those times of emergency, if he had to submit them to the slow complacent dialogue form of psychological analysis, the therapeutic success would be scarce and delayed (4).

From neurologist to neurosurgeon

Vincent's return to Paris as a war hero brought him back to his master Babinski. Next to him, he began a new cycle of works. His great knowledge and talent on classical neurology was astonishing; even so, he couldn't accept the therapeutic scepticism or the theorist and academic bearing because of the

endless debates that were reigning in this specialty. The clinical and nosological progress achieved by his predecessors did not seem to assent to real relief. Instead, Babinski showed him what a profound joy could give the surgical successes achieved in America and England against the so-called incurable lesions.

His constant desire for development encourages Vincent to invent new methods. With his friend Thierry de Martel, he considered medicine as a sport of the mind and they wanted to acquire full control of the emerging technologies which began in the early 20th century, to enter into all branches of medicine (5).

However they were severely criticized by seniors who were seeing in the introduction of these new methods the degradation of the work of the rational mind and its replacement by an automated system.

Vincent stressed also the importance of good physical shape maintenance, imperative in a discipline as exhausting as neurosurgery. "Physically, he wrote, the job of a neurosurgeon is painful, the operations are long.... Then there is the monitoring of postoperative recoveries, through day and night.... The neurosurgeon must be physically trained as an Olympic champion". In 1945, he added: "If neurosurgery gives joy like no other ... it makes the surgeons real slaves.... The last fifteen years, almost day and night, my life has been confused with that of neurosurgery" (6).

It was in 1930 that finally Vincent separated from Thierry de Martel, for whom he was sharing fraternal affection.

Charles Jacques Bouchard (1837-1915) who dominated in medicine for years with dictatorial ways denied the title of Associate professor to Babinski. This autocracy had marked Babinski, who passed that bad memory to Vincent (7).

Babinski brought in some way, the neurosurgery in France from Sir Victor Horsley (1857-1916), by operating in Paris, the first tumor of the spinal cord and from Paul Lécène (1878-1929), who was the first French surgeon involved in a similar case.

Vincent himself had requested, before the war, his friend Thierry de Martel (1876-1940), to do to some brain tumors, what Babinski had taught him in foreign trials. Gradually, thanks to Vincent and other Babinski's students, Jean-Alexandre Barré (1880-1967) and Auguste Tournay (1876-1969) in particular, Martel became the Babinski's neurosurgeon, who did not give easily confidence. As for Lécène, he realized that it was impossible to perform both general surgery and neurosurgery.

Martel did everything he could to be aware of neurosurgery of that time. He visited, in fact, the masters of the specialty, Horsley, Harvey Cushing (1869-1939), and soon he had many patients to treat. He operated the second spinal tumor that was cured in France, he introduced the retrogasserian neurotomy (Frazier's operation) and he endowed the instrumentation with a very ingenious trepan, which attained big success everywhere.

Although Babinski and Vincent were disappointed by the severe postoperative complications of their patients, in the same period Horsley and Cushing had excellent post-

operative results. A century ago any man suffering from brain tumor succumbed after suffering overwhelming headaches, and sometimes, after having become blind for many months. Any patient suffering from paralysis due to compression of the spine by tumors, even benign, could not leave his bed where he had to pass very miserable years, before being defeated by painful complications. Many patients with facial neuralgia felt their pain exasperate so mercilessly that suicide was the only thing they could think of. For the majority of such patients, the situation in several countries began to be reversed (8). So, why was France slow?

Since 1926, Vincent was saying to his students, that there was a new neurology, born and developed in the United States, which he promised to teach them. It was created and perfected by surgeons gradually specialized in the pathology and interventions of nervous system. He lamented that this kind of surgeons did not exist in France. In 1927, he left with Martel to America. Vincent spent six weeks next to Cushing, conquered and succeeded, through his intelligence, his seriousness and scholarly courtesy of Percival Bailey (1892-?), former student of Pierre Marie in Paris, to review the innovative methods of the American neurosurgery and many physiological and pathological new facts that were discovered. Determined already to create and grow the French neurosurgery, his patriotism compelled him, not to let those who practiced neurosurgery to be satisfied with results as imperfect as in the past; however, despite the exhortations of Babinski and Cushing, he was not thinking yet to operate. After his return to France, and after some new disappointments, he came to the biggest decision of his life: "I began to understand, he said one day with frank immodesty that the mortality is not going to be decreased unless I operate myself" (9).

He was 48 years old, and by then he had never been taught the surgical gestures, but he was a prominent and admired neurologist. But what mattered to him was the safety of this situation! He now had a new master and model, Cushing. With the progress he was making to this application, he was only thinking of handling stitches, sutures, ligatures and separations, which he repeated a thousand times. The scholar was becoming craftsman.

Vincent knew nothing of the magnificent work of Cushing when he saw the author; but what he especially learned was the precautions of delicacy, detail, perfection of haemostasis and suturing, which must be taken to act without harming and operate as a master. Achieving haemostasis is easy in general surgery. The necessary instruments, clamps and ligatures are usually easy and harmless; but, in the case of the brain, this could be a harmful and rough process. Cushing had invented the clips, very small metal staples tight on the vessel that is bleeding and left there. He also invented in neurosurgery, the use of electrocoagulation in bleeding vessel. Progress here could, at first glance look like a setback (8).

In Boston, Vincent watched and understood everything, and in turn he seduced for the quality, the fixity of his curiosity, his enthusiastic receptivity, relevant observations, his

admirable knowledge of brain and lesions. Cushing operated his patients having around him all of his assistants, gathered in a large cohesive team and being happy to obey such a leader.

Having learned during this first trip, the value of a diagnosis more accurate than those which he already knew to do, and the number of specialized collaborators that a neurosurgeon must at all costs obtain for help, if his ambition is the perfect clinical and proper preparation of the patient before the surgical procedure: having seen how the cerebral hemispheres should be treated, differently than ordinary tissues, if the surgeon prefers to be itself, more than a manoeuvre, a brain, it had not yet led Vincent to the desire of operating himself or doubting about another; but since his return, he was never to stop thinking to the incomparable satisfaction that await anyone whose knowledges unite the science of diagnosis of a great neurologist and the consumed art of a perfect operator. The most skillful man in the world, if he ignores the anatomy of the brain, the reactions of this organ to the slightest injury he will always be intruder (1).

Vincent became a neurosurgeon shortly before turning 50 years old. Why had he thought of this new orientation after the halfway of his life? What virtues or what intentions had truly inspired and would lead to this impressive mutation of a person in his fifties?

Disappointed by the results of the French neurosurgery which remained seriously back comparing to those obtained and published by foreign surgeons, he decided to take the scalpel himself, not without measuring the risks though.

So, Vincent expected to be both the person who is responsible for the diagnosis and who handles the surgical instruments, the scholar and the craftsman as well. This sudden and surprising decision pushed him away from Thierry de Martel, who had been the most ardent neurosurgeon of his time in France and had already formed excellent assistants. This rupture, during which there were shrill phases, put a dark cloud on the development of neurosurgery in Paris and on the destiny of each of the two former friends too.

The year 1928 was very important for Vincent; he began to operate and also published a report on tumors compressing the frontal lobe, in which he could state, on a personal statistics of fifteen cases, thirteen accurate diagnoses, or in 86% of the cases. We must mention, what Vincent rarely said, that Martel had healed six patients out of thirteen, a number less disappointing than one could suppose. In his clinical picture, Vincent attempted to do for the frontal lobe, what Babinski had done for the cerebellum; the meeting of the less unfaithful signs in a striking syndrome. Instead of following the classic grouping, psychic signs, balance disorders, coordination and mime, he proposed the following triad added to the signs of cranial hypertension: facial paralysis of the central type, more or less pronounced aphasia, early mental health problems clearly represented (8).

Vincent, initially helped by surgeons operated successfully his first patient, who had been diagnosed with intracranial hydatid cyst; that day, Vincent had requested an expert surgeon to incise the scalp and lay the cranial flap; then he did himself the particularly delicate part of the actual brain

operation. The lack of operating experience could be slightly perceived in his movements, however, on the other hand, he reassured by all his minuteness and ease of his orientation in the skull. From May 1929, he had no need to have an expert surgeon next to him. He thought he became surgeon, in a year, and now he operated with his interns. He needed only a few months to learn the essential surgical gestures.

From May to July of 1929, he treated twenty-five patients and already managed to remove a range of tumors the removal of which had never been attempted or succeeded in France: craniopharyngioma, adenoma of the pituitary gland frontally approached, meningioma of the sphenoid bone, cerebellar astrocytoma, hemangioma of the calamus.

In the last quarter of 1929, the separation with Martel was final. This fact forced Vincent to seek a health care establishment. The practical difficulties could not stop him. For many of his patients, he paid himself the cost of hospitalization.

However, there were still many problems to be solved! For a solitary suspicious person, what teammates should be recruited, collected, harmonised! He expressed his gratitude to his first collaborators, who showed an almost sublime dedication and soon became remarkable: "I was assisted in this task by my assistants Puech and David. We were living together. They lunched and often dined with me. They were in my mind all day, and almost overnight, when we reoperated. They dedicated all of their efforts, they responded to all my requests" (8).

Vincent and his successive assistants' joint work was always a very good example of faith, charity and scientific diligence. But at first, it was necessary that everyone was as healthy as he was fervent to devote, since the operations were long and hard; sometimes eight hours of standing were required for a single operation during which the mind remained concentrated. The postoperative care, which was often dramatic at the time, forced them to extended and active supervisions at night.

At the same time to assert themselves and win, they had to prepare scientific papers, edited with abundant evidence and achievements reports, so that it was learned in the scholar society, that there was a doctor in the hospitals of Paris who became the best neurosurgeon of Europe, but while inertia resisted, the only way this doctor could continue his work was at his own expense in a private clinic. Surgeons were the first to admire the extraordinary achievement and to admit that a medical service, transformed into a department of surgery, by the Public Assistance suits to the innovator. The neurosurgery department of the Pitié hospital was created in 1933, one year after Babinski's death. Vincent with all his perseverance and his authority worked to render this creation a quick success. But loads of issues to be resolved were waiting: the medical personnel, following the inevitable hierarchy, students, nurses, the teams had to be matched, the susceptibility had to be calmed, the experts needed to be mobilized, the instruments should be accumulated, the laboratories should be constructed, the rooms of medical care, the isolation rooms, the consulting rooms, the examination rooms, etc. (6).

In a very short time, the French statistics were almost reversed. Instead of having a mortality rate of 60 to 70%,

now it was the percentage of success reaching from 70 to 80%. For this reason, he spent without counting, isolated himself from the world and deprived of rest. For years, Vincent, struggling with all his strength against various difficulties and the solemn routine, healed the patients that no one before him in Europe had ever imagined to heal. He taught his students how to entirely eradicate lesions, which until before were considered as unapproachable or ineradicable. He expanded his school every day, and prepared disciples. Owing nothing to the gossip columnists, to the world's cackling, to the ecstasies of the society's babblers, to propaganda tricks, he was building his magnificent work. Thanks to him, already, some skull fractures, meningitises, arachnoiditises, encephalitises, many tumors and intracranial abscesses did not have any more severity which previously darkened their evolution.

When asked to define the reasons of his wonderful achievement, his reply was in honor of his honesty as much as his simplicity: "If I have succeeded, is because I knew how the brain was made; I saw in place each different region; I knew the vessels; I knew the microscopic anatomy of its tumors, its physiology; I suffered with the brain during operations. A mechanical conception of neurosurgery is absurd; a biological conception is also needed; the brain must be treated as the most sensitive and most vindictive of the living organs" (8).

In 1930, Vincent visited Cushing for the second time. On the boat, he had spent hours to handle longer and longer dissecting clamps, for more difficult catches, or to sew together pieces of cloth, educating humbly his fingers, their tactile subtlety and all the ordinary gestures of incise, split, circumscription, haemostasis, removal, repair. Cushing considered already his French friend as the first neurosurgeon of Europe. As he repeated: "Will you be Professor?" Vincent replied: "No! This is impossible" (8). With this answer, he wanted to inform Cushing that in Paris the custom was to choose the professor among the Associate professors. However, Babinski and Vincent had shown aversion for the aggregation. The failure of the first outraged in retrospect his beloved student.

Vincent could be regarded as one of the less hesitant and changing men, according to their judgments. Which would be his reaction, his friends wondered, to a proposal or professorship? Some hoped for his disinterest, but others had no doubts about his positive answer. How far would last the independence called invariant, a nonconformity considered as being resolute?

Vincent was soon appointed by the Council of professors (40 voters). Its members did not care whether he had or not the title of Associate professor, they just wanted to entrust the chair to the man that his culture, his personal work, his influence and character were unquestionable. Thus he secured the unanimous vote.

The new teacher gave his first lecture on January 26, 1939 in a large and well-informed audience (Fig. 1).

The least cooperative of the speakers had prepared for this formidable hour a demonstration in four points: the birth and development of neurology; French neurosurgery;



Figure 1. *The eminent Professor Clovis Vincent*

his personal career; the future of this specialization.

Suspecting or knowing the objections before unanimity which had existed against the creation of this chair, he did not hide that the doctors in that always brilliant neurology school of Paris, were a little late on treating paralytics, the martyrs of pain, blinds and mentally ill persons, by interventions able to cure them and thus deprived of the science the observation and experimentation facilities that neurosurgery multiplied itself. Modest at the time, when he recalled what had become the treatment of the brain abscess, with their removal, the most secure monitoring of skull fractures, with the knowledge of brain oedema, traumatic serous meningitis, ventricular collapse, he neglected to refer his important contribution to all these achievements (9).

His human part was also revealed in this profession of faith. As regards his strategy, in the presence of cerebral gliomas, which are so serious tumors that in Cushing's experience there were more than one cases that lasted more than ten years, Vincent, with a clear transparency of soul, wondered whether it was appropriate to operate them, or abandon the attempt, when the duty was less clear. With recent examples, he proved that the even a limited healing can bring real and various benefits to a person who is suffering and will die; but he did not penetrate to deep psychology and did not go far in the analysis these cases of conscience.

Addressing to doctors too theoretical, and too often late in the diagnosis of curable tumors, he promised an education designed to facilitate information less questionable and more expedient decisions.

In this first lesson, he announced the upcoming conferences and the variety of the guests, he was careful to be an example for many of them, due to his weird and beautiful

function, and to claim that future neurosurgeons will be recruited mainly among neurologists. The great responsibility of being director being committed, he repeated that in his view, a rather ideal preparation should last six years: two years of general surgery, two years of neurology and two years of neurosurgery (6).

The promises of education had not been sufficient for the new professor. He had to enrich constantly the methods of functional and physical exploration of the nervous system, as well as the curing techniques, the post-operative therapeutic resources, the experimental procedures. Before concluding, he was pleased to show all that neurosurgery had brought to the neurology, and gave as example the famous cerebral localization and the contribution of neurosurgery to the general surgery: the benefits of gentleness, thoroughness, scrutineer slowness, that it highlighted.

When closing his lecture, he urged his colleagues to "be, in the today's wild humanity, this race of rare men whose essential purpose is to overcome suffering and death." (6)

A few months after this speech, the war of 1940 found him in the patriotic provisions as vibrant as those of the previous war. He was among those who believed that Paris would be a major battleground. That is how he decided to stay in the capital and practice his profession as a surgeon, where existed sick and wounded French people. During those years, he worked hard. The Germans knew who he was and quickly showed him a reassuring respect. In fact, between the two wars, he went to Berlin, hoping for reconciliation between brave enemies, very often conflicting. He had actually gone there to show that even in science, including neurosurgery, France did not consent to being beaten by his neighbors.

On many neurological issues, he continued to inspire his students remarkable work: for example on tumors of the corpus callosum, cerebellar hemangiomas, acoustic tumors, suprasellar meningioma, cerebellar tuberculosis, ventricular depletion phenomena, cerebral hypertension, optic chiasm glioma, hydrocephalus, intracranial blood effusions in infants, cranio-pharyngiomas, some kinds of paraplegia in flexion, etc (9).

The last years

Shortly before the liberation, a conflict with the German direction of the Pitié hospital deprived him of his service. He accepted immediately part of the surgical department of Professor Henri Mondor, which was offered to him.

When the war was over, Vincent was changed, heavy, quite pale. In 1947, he had to abandon the department he had created, animated and rendered famous, to terminate functions on which he had ceaselessly consecrated, his strength and time. Fierce solitude became necessary for him.

His friend René Moreau, who treated him, said: "In the last hours, his stubborn and creative soul, releasing the sufferings of the exhausted body, did not linger the vain life regret. Vincent wanted to force the future and ensure the continuity of his work beyond himself, make it survive in the heart, thought, and actions of those he had awakened to the neurosurgery..." (1).

Discussion

The death of the person, who always seemed so tenacious, was a painful surprise. However the sorrow of his loss languished, because of all that would still have to give the real genius of the clinician and the prodigious courage of the explorer, if Vincent had watched his own health as he did the other people's health, can not prevent from the full admiration of the extraordinary adventure that his life was, giving him a place among the greats.

The future generations will not ignore what they owe to him on scientific papers, models of sincerity and reason and new surgical procedures. He created a bright school, provided a place of world renowned research and remained, in science, an example of investigative rigour, showing the French contribution to a magnificent advance in medicine and surgery.

It is one of the neurologists who has most insisted on the cautiousness of the diagnosis, sometimes too systematic, of syphilis in diseases of the nervous system.

He did not write books but published numerous articles in the *Neurological Journal* (*Revue neurologique*), the *Medical Week* (*Semaine médicale*), the *Journal of surgery* (*Journal de chirurgie*), etc. His report on frontal lobe tumors is fundamental.

His name is linked to a clinical sign "sign of Vincent" very precise and subtle at the time, which gives many information, according to the study on the deglutition, on the instinctive consciousness of the injured in the skull. His name is also linked, among other things, to the "Vincent retractor", "Vincent bone forceps", and "Vincent spatula" (6).

Conclusion

If we accept that neurosurgery was really born when Cushing proved that the neurosurgeon had to be at the same time a surgeon, a neurologist and a biologist, we will realize that France owes this triple guarantee of recognition for the first time to Clovis Vincent.

References

1. Moreau R. Clovis Vincent. Paris: Masson; 1948.
2. Manuila A, Manuila L. Vincent Clovis (1869-1947). In: *Dictionnaire français de Médecine et de Biologie*. Paris: Masson; 1972. p. 174.
3. Vincent C. La Méningite chronique syphilitique. Les lésions des nerfs de la base du cerveau. Paris: Éditions Steinheil; 1910.
4. Dupont M. Clovis Vincent (1869-1947). In: *Dictionnaire historique des médecins dans et hors de la médecine*. Paris: Larousse/Bordas; 1999. p. 567-8.
5. Thieffry S. Leçon inaugurale. Paris: Masson; 1965.
6. Giroire H. Clovis Vincent. Pionnier de la neurochirurgie française. Paris: Perrin; 1971.
7. Huguet Fr. Vincent Clovis. In: *Les Professeurs de la faculté de médecine de Paris*. Paris: Éditions du CNRS; 1991. p. 500-1.
8. Mondor H. Clovis Vincent (1880-1947). In: *Anatomistes et chirurgiens*. Paris: Flagrange; 1949. p. 473-30.
9. Binet L. Clovis Vincent (1869-1947). In: *Médecins, biologistes, chirurgiens*. Paris: SEGEP; 1954. p. 285.