

The neurovascular studies of Dr Josep Falp i Plana (1873-1913)

A. Arboix

Cerebrovascular Disease Unit, Department of Neurology, Hospital Universitari del Sagrat Cor, Universitat de Barcelona, Barcelona, Spain.

ABSTRACT

Introduction. This article analyses the neurovascular studies by the author of the first series of stroke cases in Spain: Dr Josep Falp i Plana (Barcelona 1873–Tarragona 1913).

Methods. We conducted a literature search on Medline with no date limits to locate the keyword ‘Falp Plana’. We also drew from the doctoral thesis by M.G. Fabregas Camps (*Història de la Neurologia a Catalunya. De l’any 1882 a l’any 1949*), the appendix on stroke in Dr Falp’s 1901 medical topography (*Estudio general de la apoplejía –feridura– en Solsona*), and primary historical literature sources selected from the library of the Academy of Medical and Health Sciences of Catalonia and the Balearic Isles, Barcelona.

Results. Josep Falp i Plana was a multifaceted individual who excelled in medicine and writing, especially poetry, and displayed great civic and social involvement. He was also doctor to Catalan poet Jacint Verdaguer. His main published study was *La topografía médica de Solsona y distritos adyacentes*, a medical topography published in 1901 that included an appendix on stroke (*Estudio general de la apoplejía –feridura– en Solsona*). This appendix was awarded the gold medal by the Royal Academy of Medicine of Catalonia in 1900. Falp i Plana also founded and presided over the first vegetarian society in Catalonia. He died at the age of 40 of meningitis secondary to an ear infection.

Conclusions. Josep Falp i Plana’s neurovascular work was both remarkable and significant. He was one of Spain’s pioneers in clinical studies of cerebrovascular disease.

KEYWORDS

J. Falp i Plana, history, neurology, cerebrovascular disease, stroke

Introduction

Dr Josep Falp i Plana was born in Barcelona in 1873 and the considerable prestige he enjoyed as a general practitioner in his time is well-documented.^{1,2} However, this author’s neurovascular studies are less well-known, even though they constitute one of the most significant pillars of his robust and inspiring medical and scientific career.

The purpose of this study is to present and analyse Dr Josep Falp i Plana’s neurovascular research and clinical studies, given that only his work in internal medicine is widely recognised. In contrast, his very important contributions to clinical vascular neurology have not achieved an appropriate level of visibility.

Material and methods

We conducted a literature search on Medline with no date limits to locate the keyword ‘Falp Plana’. We also drew from the doctoral thesis by M.G. Fabregas Camps (*Història de la Neurologia a Catalunya. De l’any 1882 a l’any 1949*) presented in 1992 at the Universitat Autònoma de Barcelona,¹ and primary historical literature sources selected from the library of the Academy of Medical and Health Sciences of Catalonia and the Balearic Isles, Barcelona. Results are listed in the following section.

Results

1. General outline of the life of Dr Falp i Plana

Dr Falp i Plana was born in Barcelona on 31 May 1873 as one of nine siblings in a well-to-do family. He was a

cultivated man with strikingly varied interests ranging from the scientific to the literary and civic. According to E. Bertran,² one scholar of his works, Falp i Plana's character was marked by the devoutness of his Christian beliefs, his impressive general knowledge, and his thorough understanding of medicine (Figure 1).

His paternal grandfather, also a doctor, had practised in the town of Solsona in Lleida province, and Dr Falp always admired him greatly.

Dr Falp received his medical qualifications from the Universitat de Barcelona in 1894 and completed his doctorate at the same institution in 1898. As we read in Guerrero's analysis of this figure,³ Dr Falp's humanism was the result of a life dedicated to study, reading, and reflection. As an outstanding humanist, he also possessed ample knowledge of classical Greece and Rome.

In the early stages of his career, Dr Falp i Plana dedicated his studies to homoeopathy and hydrotherapy before later turning to natural medicine and vegetarianism. In 1908, he founded the vegetarian society Lliga Vegetariana and served as its first president; he also directed the journal *Revista Vegetariana* from 1908 to 1909. Apart from this, however, he showed a marked interest in stroke (*feridura* in Catalan), which was one of the main causes of death in elderly patients in this doctor's time.⁴

His well-deserved prestige was such that the famous poet Jacint Verdaguer (author of *Canigó*, *La Atlàntida*, and other works) requested an appointment. Falp became Verdaguer's general practitioner in 1896, and the mutual admiration and friendship that developed between the two men continued until the poet's death from tuberculosis in 1902.

On 4 October, 1913, Dr Falp i Plana died in Tarragona of meningitis secondary to otitis while at the height of his intellectual and professional output. He was only 40 years old.⁴

2. Literary and social contributions

The last third of the 19th century in Catalonia witnessed an awakening on the economic, artistic, social, linguistic, political, and even scientific levels. This was the Catalan renaissance, or *Renaixença*.⁵⁻⁷ Dr Falp is a good



Figure 1. Dr J. Falp i Plana, author of the first clinical and epidemiological study published in Spain (1901). His study addressed cerebrovascular diseases.

representative of those times; in addition to being a doctor with an outstanding level of medical training, he was an active writer with particular interest in poetry. His outstanding works include *Poesies* and *Mossén Verdaguer: El poeta. El sacerdot. L'home. El malalt* (both published in 1902). His most recognised contribution, however, was *Lo gèni català*, an epic poem in 11 cantos, with more than 8000 verses spanning 448 pages written in pre-Fabran Catalan (predating Pompeu Fabra's linguistic reform). It follows the stanza structure used by the Nobel Prize winner Frédéric Mistral, Falp's favourite poet, in his poetic masterpiece *Mirèio*, published in 1859 in the Occitan language. The rhyme scheme of these verses is AABCCCB, that is, the first and second verses rhyme, and the fourth rhymes with the fifth and sixth; the third verse and the seventh rhyme, and they are the longest verses in the stanza. Falp's poem abounds in erudite references to the mythology, history, religion, science, politics, and culture of his times.

Falp was also deeply involved in civic and social initiatives related to support for Catalan culture in his time.⁸ He participated in the First International Congress on the Catalan Language and the First Congress of Catalan-speaking Doctors. He also cooperated with the Catalan Regionalist League to promote the advancement of Catalan society and oppose the centralist position. A follower of Pi i Margall, he supported the Republican movement that arose from Ateneu Barcelonés (the Athenaeum of Barcelona). A devout Catholic, he became president of the Congregation of Marian Fathers of Barcelona. He was also committed to promoting Catalan and Esperanto, and in defending the cause of his poet friend Verdaguer, he clashed with the ecclesiastical authorities toward the end of his life. At the same time, he occasionally wrote pieces for such newspapers as *La Vanguardia* and *Diario Catalán* and magazines including *l'Atlàntida*, *Enciclopèdia Catalana*, and *El Palleter*.

3. Medical contributions

Dr Falp i Plana, in addition to his extensive training in general medicine, was also known as one of the first great theoreticians of vegetarianism. He recommended refraining from unnecessary bodily stimulation with meat, alcohol, or tobacco. He considered meat toxic, calling it “corpse-derived nourishment” and accusing it of promoting heart disease, hypertension, stroke, and many other chronic diseases.

As a therapist, he was a staunch defender of hydrotherapy and adopting a vegetarian lifestyle. He recommended a natural lifestyle outdoors (with lots of fresh air and sunshine) and maintained that physical exercise was generally beneficial.¹⁻³

Dr Falp i Plana was a contemporary of many pioneering neurologists active in late 19th-century Catalonia (Table 1). These figures included Luis Barraquer Roviralta (1855-1928), the founding father of clinical neurology in Spain, who set up the country's first neurology department in the former Hospital de la Santa Creu in Barcelona in 1882.⁹⁻¹¹ Other examples were Bartomeu Robert i Yarzabal (1842-1902),¹² a general practitioner and Barraquer Roviralta's mentor; and Artur Galceran i Granés (1850-1919), president and founder, in 1911, of the Barcelona Society of Psychiatry and Neurology, which was the first neurological society in either Catalonia or Spain.¹³⁻¹⁵

Both Barraquer Roviralta and Galceran i Granés conducted research and published occasional papers on cerebrovascular disease. However, it should be stated that during the 19th century and most of the first half of the 20th, stroke patients who came to hospitals were either indigent or possessed only minimal resources; other patients with cardiovascular disease generally received medical care in their own homes.¹⁶ For this reason, case series of stroke patients were non-existent, and as a result, the clinical, epidemiological, demographic, and aetiological characteristics of cerebrovascular diseases were almost unknown.

4. Dr Falp i Plana's original contribution to neurovascular studies

Dr Falp spent much of his time in Solsona, which was home to his mother and his siblings. That town also provided him with material for his most important study, published in 1901 as *La Topografía Médica de Solsona y distritos adyacentes* (A medical topography of Solsona and

Table 1. Nineteenth century Catalan doctors active in neurology

Dr Bartomeu Robert i Yarzabal (1842-1902) General internist and mentor to L. Barraquer Roviralta.	Dr Luis Barraquer Roviralta (1855-1928) Founder of Catalan and Spanish clinical neurology and director of the country's first neurology department, established in 1882 at Hospital de la Santa Creu, Barcelona.
Dr Artur Galceran i Granés (1850-1919) President and founder, in 1911, of the first neurological society in Catalonia, the Barcelona Society of Psychiatry and Neurology.	Dr Josep Falp i Plana (1873-1913) Pioneer in clinical and epidemiological stroke research.

its neighbouring districts).¹⁷ This manuscript had already been presented and honoured by the Royal Academy of Medicine of Catalonia in 1900. Every year, the Academy awarded its prestigious gold medal and the title of 'Academic Correspondent' to the author of the best medical topography. Inspired by the Hippocratic philosophy of a physician's dedication not only to the patient being cared for, but also to the geographical area in which he provides care, the Royal Academy of Medicine of Catalonia began encouraging doctors to keep demographic and epidemiological records of the populations they served. A prize for the best report then began to be awarded yearly.⁸ In these reports or medical topographies, doctors analysed those illnesses, including cerebrovascular disease, present in the populations to which they offered care. The oldest one dates back to 1787.⁸

Dr Falp's medical topography is an extensive volume consisting of 359 pages.¹⁷ The quote chosen as the introduction to his book informs us that "the study of nature is instructive to scholars and artists alike, but as long as they paint their portraits indirectly, they will only amount to windbags and copycats".

In his study, Dr Falp deftly handles medical, geographical, demographic, anthropological, ethnographic, and historical information about Solsona and another eight neighbouring towns in Lleida province (Clariana, Llobera, Riner, Navés, Pinell, Lladurs, Castellar, and Olius). To that monograph, Dr Falp attached an appendix with a novel and elegant original study on the clinical presentation and aetiology of apoplexy in that geographical area. The study, whose title can be translated as "Original study of apoplexy (*feridura*) in Solsona", is highly relevant, both scientifically and historically. This was the first time that one of the most typical causes of death in the elderly at that time had been examined in a large series of patients. His topography also included a brief summary of the main outbreaks of cholera and malaria in the same area.

5. The treachery of stroke

Falp carefully highlighted all the most relevant points in the medical histories of each patient affected by "stroke, the treacherous disease" and classifies them statistically. In the author's words, "...Solsona, like any small town, offers excellent conditions for gathering true and complete observations".

The series was exceptional due to having a large number of patients (44 cases) at a time when cerebrovascular events were not typically studied.

The text defines apoplexy as "an event presenting as lack of consciousness with or without transient or permanent paralysis, or else as sudden paralysis with no loss of consciousness, with continuity of respiration and general circulation in all cases".¹⁷

We should point out the author's interesting comment in the results section in which he displays his thorough knowledge of the typical manifestations of stroke:

Such richness and variety is to be found in the array of syndromes, with so many forms ranging from simple motor aphasia when the haemorrhagic focus affects the left third frontal gyrus, to *morbus atonitus sideratio* [sic] which extinguishes life when an artery bursts in the pons Varolii or the medulla oblongata!¹⁷

According to this author, risk factors included excess of sleep, vascular hypertension, nutritional perversion, having a weak heart, and alcoholism. A proponent of vegetarianism, he emphasised that

an excess of food is a pointless source of stress on both stomach and brain. It floods the vessels with exaggerated amounts of dangerous toxins, which the body's defence mechanisms (secretor and eliminator systems) cannot adequately destroy or isolate.¹⁷

-(191)-	
Síntomas importantes no esenciales:	
Convulsiones generales.	—Observaciones X, XIV, XLIII (murieron).
Convulsiones parciales.	—Observaciones XXX, XXXI (murieron)
Contracturas iniciales.	—Observaciones X XXX, XXXI, XXXVI (murieron); XLIV (vivió).
Pulso lento-normal.	—Observaciones X, XVII, XXIV, XXXVI, XLII (murieron); XLIV (vivió).
Vómitos.	—Observaciones X, XVII, XXXVI, XXXIX, XLIII (murieron); XXI, XLIV (vivieron).
Letargo.	—Observaciones VII, XXXIX (murieron); XVI, XLI (vivieron).
Delirio.	—Observaciones XXXII, XLI (vivieron); IV (murió).
Respiración lenta é insensible.	—Observaciones XVII, XXXIX (murieron).
Coma.	—Observaciones X, XVII, XVIII, XXI, XXIV, XXV, XXVI, XXVII, XXVIII, XXX, XXXVI, XLII, XLIII, (murieron); XIX, XXXIII, XLIV (vivieron).
Sangría:	
Se practicó.	—Observaciones I, II, III, XIV (murieron).
Sanguijuelas.	—Observaciones XLIV (vivió).
Mortalidad:	
De 44 ataques 25 murieron.	

Figure 2. Schematic description of the main symptoms in the stroke patient series described by Dr Falp and published in 1901, including treatment prescribed and mortality rates (page 191 in the Appendix on local medicine investigating stroke in Solsona, taken from *Topografía Médica de Solsona y distritos adyacentes*).¹⁷

He also observed that “apoplexy is extremely rare among country dwellers in our area, at least in those who are not yet very elderly; for that reason, they live longer than the inhabitants of Solsona, who tend to suffer apoplexy between the ages of 40 and 60”.¹⁷

Dr Falp i Plana, as a conscientious scientist and scholar, cited works by prestigious authors with a demonstrated knowledge of the disease in the discussion section of his book: Nothnagel, Gowers, Letamendi, Charcot, Bouchard, Cruveilhier, Gautier, Cajal, Brown-Séquard, Bichat, Graves, Stokes, Claude Bernard, and Trousseau.

Falp insisted that preventive treatment was fundamental and prescribed a vegetarian diet, abundant consumption of milk “because it decreases the toxic coefficient of the blood”, and natural agents, such as cold showers, that when administered in the correct doses provide stimuli that prevent ‘hypotonus’. In modern parlance, these natural agents might be understood as natural treatments with immune system-stimulating properties.

In the 19th and early 20th centuries, treatment for stroke was extremely limited and practically non-existent. Blood-letting, emetics, certain sedatives, and galvanic stimulation were the only available treatments.^{16,18} Dr Falp i Plana stated in his book that blood-letting had always been fatal in his experience, a position that contradicted the academic doctrine of his time. He did state that the technique could be used under exceptional and very rare conditions. In line with Graves’ beliefs, he stated that “blood-letting cannot decrease the amount of blood contained in the brain. Nevertheless, vascular tonics, electricity, massage, and showers may slowly and gradually ameliorate repetitive paralysis disorders”.

Men were predominant in his series (23 cases compared to 21 in women) and the typical age range was 51 to 60 years (19 cases). Strokes with loss of consciousness and hemiplegia without loss of consciousness were the most frequently recorded clinical types. The notes and medical histories in the verification statistics for the cases (Figure 2) describe clinical profiles that could be completely compatible with lacunar infarct (cases 7 and 11), cerebral haemorrhage (cases 14, 28, and 35), cardioembolic infarct (cases 8, 29, and 39) and transient ischaemic attacks (cases 37 and 40). Blood-letting (cases 1, 2, 3, and 14) and use of leeches (case 44) were also prescribed under special circumstances. More than 55% of the patients in this study died (25 of 44 cases).

Below, as an example, we include the clinical observations for case 6: “M., a 67-year-old man, thin with unhealthy colouring. Sedentary and given to sleeping. Attack of paralysis without loss of consciousness. Recovered somewhat in a few months but experienced a fatal attack two years later”.¹⁷

Conclusions

Although Dr Falp i Plana’s neurovascular research is not well known, his contribution was both remarkable and significant. He completed pioneering research in clinical, demographic, and statistical aspects of stroke. Dr Falp i Plana was the first doctor in Spain to examine cerebrovascular disease.

Conflicts of interest

The author has no conflicts of interest to declare.

Acknowledgements

I would like to thank Dr M. G. Fabregas and Dr J. L. Martí-Vilalta for providing the preliminary information that awakened our interest in the work of Dr J. Falp i Plana. I also thank María José Sánchez, the librarian at Hospital Universitari del Sagrat Cor, Barcelona, for her invaluable assistance in locating and acquiring rare documents.

References

1. Fabregas MG. Història de la Neurologia a Catalunya. De l’any 1882 a l’any 1949 [doctoral thesis]. Barcelona: Universitat Autònoma de Barcelona; 1992.
2. Bertran EG. La fira de Sant Bartomeu de Solsona amb l’esguard del metge Falp i Plana. *Treballs de la SCG*. 2012;73:131-44.
3. Guerrero LS. El pensament del metge Josep Falp i Plana (1873-1913) a partir de l’obra “Lo geni català”. *Gimbernat*. 2000;33:183-201.
4. Arboix A, Fabregas MG, Martí-Vilalta JL. Stroke in the late 19th and early 20th centuries: a clinical and therapeutic review. *Neurosci Hist*. 2013;1:6-11.
5. Zarzoso A. El Museu d’Història de la Medicina de Catalunya. Barcelona: Col·legi Oficial de Metges de Barcelona; 2004.
6. Martí-Vilalta JL. El naixement de la neurologia catalana. *L’avenç*. 1982;55:21-5.
7. Balcells M. La neurología en Cataluña hasta 1949. In: Bermejo F, García-Albea E, Acarín N, Chacón J, editors. *La neurología española al final del milenio. Historia y porvenir*. Barcelona: Uriach; 1999. p. 37-59.

8. Vallribera P. Les topografies mèdiques de la Reial Acadèmia de Medicina de Catalunya. n° 86. Barcelona: PPU; 2000.
9. Barraquer Bordas L. Mig segle de neurologia clínica viscuda. Barcelona: Reial Acadèmia de Medicina de Barcelona; 1988.
10. Barraquer Bordas L. Lluís Barraquer Roviralta (1855-1928) fondateur de la neurologie clinique catalane et espagnole. History of Neurology. Cogito. 1989;1:65-71.
11. Arboix A, Gironell A, de Fàbregues O, Font MA, Izquierdo J, Krupinski J et al., editors. Història de la neurologia catalana. Barcelona: Societat Catalana de Neurologia, 2011.
12. Balcells M. Historia General de la Neurología. Esplugues de Llobregat: Grupo Saned; 2009.
13. Arboix A, Fabregas MG. La faceta neurológica del Dr. Artur Galcerán i Granés (1850-1919). Neurología. 2011;26:239-43.
14. Arboix A, Fabregas MG. Las primeras sociedades neurológicas catalanas y sus protagonistas. Neurología. 2012;27:112-8.
15. Rodríguez-Arias B, Codina A, Espadaler JM. Importancia y trascendencia de las principales sociedades neurológicas fundadas en Barcelona. Anal Med Cir. 1974;237:301-20.
16. Martí-Vilalta JL, Martí-Fàbregas J, Delgado R, Martínez S. Les malalties vasculars cerebrals. Evolució de la seva atenció. In: Arboix A, Gironell A, de Fàbregues O, Font MA, Izquierdo J, Krupinski J et al., editors. Història de la neurologia catalana. Barcelona: Societat Catalana de Neurologia; 2011. p. 95-107.
17. Falp J. Topografía médica de Solsona y distritos adyacentes (Clariana, Llobera, Riner, Navés, Pinell, Lladurs, Castellar, Olius): Subseguida por vía de apéndice de un estudio original clínico y etiológico de la apoplejía en Solsona y una sucinta reseña de las principales epidemias de cólera y paludismo ocurridas en dicha ciudad. Barcelona: Tipografía de la Casa Provincial de Caridad; 1901. p. 205.
18. Corbella J. Josep Falp i Plana (1873-1913), metge i poeta del Bages i del Solsonès. Miscel·lània d'estudis bagencs 3. Manresa: Centre d'Estudis del Bages; 1984. p. 213-20.
19. Raventós JC. L'evolució de l'assistència (a Catalunya). Barcelona: Fundació Uriach 1838; 2004.