

Historical Aspects of Teaching Clinical Cardiology in the Old Hospital Nacional de Clínicas (1901-1956)

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Argentine cardiovascular clinic officially begins at the beginning of the twentieth century. Indeed, on August 20th, 1901 Dr. Abel Ayerza (Figure 1), Titular Professor of Medical Clinic at the University of Buenos Aires, gives a masterful lecture in which he describes the clinical case of chronic pulmonary heart with anoxemia. In his 'first' presentation, which continued to August 31st, he chose the name 'black heart' for this type of patient, very appropriate from the descriptive point of view, which had an initial general acceptance and further global spread. It is probably the first condition described in our country that was known throughout the world as Ayerza's disease.

It is no coincidence that during the period between the late nineteenth and early twentieth century, Argentine medicine saw rising and shining figures of high scientific level. For this to happen, right circumstances had to be combined, which essentially consisted of the magnificent progress of European science and medicine during the second half of the nineteenth century and the atmosphere of institutional order, and stability and prosperity that in our country following to the national organization .

Abel Ayerza was one of the first Argentine doctors to do that our clinic transcended national borders. He was born in 1861, son of Toribio Ayerza and Adelina Zabala. His father, of Basque origin, was a physician graduated of the University of Montpellier and he had been improved in Paris by Trousseau and Andral. He had to leave Spain for political reasons and decided to emigrate to Argentina. Abel Ayerza, who did his secondary studies at Colegio del Salvador, in 1880 entered the Faculty of Medicine of Buenos Aires and in 1885 as internal practitioner of the comparatively new Hospital de Clínicas, where he had Manuel Blancas, Porcel de Peralta and Ignacio Pirovano as teachers. The latter sponsored his thesis entitled 'Clinical Observations', of which theme of choice he already revealed his preference for internal medicine, despite the influence of Pirovano to be devoted to surgery.

The construction of the Hospital de Clínicas had been in charge of Engineer Schwars, which was

concluded in November, 1879 but he gave it up in July, 1881. It consisted of four isolation pavilions (Figure 2) amid gardens and two surgical rooms with their corresponding enclosed areas for operations. The location, orientation of the building with pavilions for the sick, services and staff offices, fulfilled all requirements and regulations of the time. The gardens of Hospital de Clínicas (Figure 3) were noted for the variety of specimens and in them one could appraise magnolias, jasmine cape, roses, bay trees, digital plants, jacarandas and several species of conifers. It



Fig. 1. Abel Ayerza.

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had also been built a paddle court for practitioners (Figure 4).

After graduating, Dr. Ayerza, following the example of his father and probably advised by him, he went to Europe to improve his medical studies. He set his sights on Paris, which was then one of the best medical centers in the world and there he attended at hospital services of Charcot, Potain and Jacoud and also the surgeons Pean and Tillaux.

Among these giants of contemporary medicine, Ayerza acquired a surpassing clinical training, possibly the best one that could be obtained at that time anywhere in the world. He learned the details of the neurologic examination by Charcot and Babinski, and along with Potain's secrets of cardiac auscultation and method of measuring blood pressure systematically.

Jacoud initiated him in organized nosology and the cultivation of Cartesian clarity in exposition and reasoning, so estimated by the French school.

Back in Buenos Aires, Dr. Abel Ayerza obtained the charge of Chief of Clinic from Dr. Porcel de Peralta and shortly thereafter the Substitute Professor of Clinical Medicine.

Shortly after it was granted to him the ownership of the First Cathedra of Medical Clinic based in the old Room IV of Hospital de Clínicas, which became famous through his teaching.

Ayerza deeply impressed the students who heard him. Among them, Dr. Daniel Cranwell has left us the following account: 'Abel Ayerza was a tall, slender, elegant, fine facial features, straight nose, thin lips, eyes steady, high forehead man, his attitude was somewhat academic, but his treatment was always friendly and affectionate. He had received the heavy legacy of a famous name in medicine, but he knew not only to maintain it, but also contributed to make it imperishable, for his thorough and select patients, his fertile teachings and, above all, by the description of some diseases, including the one, which is known worldwide by his name'.

Ayerza cultivated with love and taught with skill the art of semiological exam, which so well he had learned alongside the French masters. He was probably one of the first to do real lectures of oratory, leaving an indelible memory and a vivid impression on his students. Among these, one of the most prominent, who in turn became Titular Professor of Semiology, he referred to Abel Ayerza with the following: "Big, slim, beautiful, always impeccable, with his French-style white apron ... Ayerza deeply impressed from the first moment that he came close. And when he was examining his patient carefully neatly ... with a precision that no other practiced, then ... the student was subdued."

Ayerza wrote little and his famous class on August 20th, 1901 was not published by him, but picked up by one of his beloved disciples, Dr. Francisco Arrillaga, in his doctoral thesis published in 1912, titled 'Secondary Sclerosis Pulmonary Artery and its Clinical Case



Fig. 2. One of the pavilions of the old Hospital shortly before its demolition. (From Pergola F, Sanguinetti F [1998]. 'History of the Hospital de Clínicas'.)



Fig. 3. Central courtyard of the old Hospital de Clínicas with the monument of Ignacio Pirovano. (From Pergola F, Sanguinetti F [1998]. 'History of the Hospital de Clínicas'.)



Fig. 4. The court palette used by practitioners. (From Pergola F, Sanguinetti F [1998]. 'History of the Hospital de Clínicas'.)

('black heart')'. Arrillaga, who was one of the first Argentine doctors to cultivate cardiovascular clinic as specialty, presented a set of eleven observations, four of them with autopsy control. His first observation is most likely the Ayerza's 'first' case, since the dates of admission and death coincide with those of the historical class, and this particular clinical case

described below. The comments are included verbatim quotes of Arrillaga.

Indeed, it is the sick J.G., Spanish, 38 years old, employee; he entered at service on August 5th, 1901, died on September 29th (Ayerza classes on August 20th and 31st).

The patient reported that since a year and a half before admission, suffering dyspnea, ankle edema and epigastralgia. Since 6 years before he noticed cough and greenish abundant expectoration, he has noticed a cyanotic tinge to his face and extremities since 18 months before admission.

For 2 months, dyspneas and cough intensified, increasing expectoration and appearing small hemoptysis. In 1881, he had an attack of rheumatism that took both legs and hands. In 1883, he suffered a pneumonia of the right side, a few months after blennorrhagia.

The test revealed a patient with cyanotic tinge of the tip of the nose, earlobes, lips and tongue, buccal and conjunctival mucosa, mild subpalpebral edema. In the neck there is slight blood dance. There are soft edemas in lower limbs, slightly reddish. In the hands: fingers are clubbed and cyanotic.

The chest examination revealed marked emphysema, making it impossible to define by percussion the cardiac perimeter. The heart sounds are heard far away. Blood pressure is 150mm Hg. Pulmonary auscultation evidences decreased air entry, moist inspiratory rales that thicken toward the base, and wheezing rales. The liver is large and painful to percussion and palpation, it is observed hepatjugular reflux. There is ascites. The CBC revealed 6,560,000 red cells per mm³ and 5,250 leukocytes per mm³.

Theobromine is indicated as treatment with digitalis, polygala, balsamic and 6 leeches are applied on the liver area.

In Arrillaga's thesis is quoted: 'The patient's condition worsens appreciably: edemas have come to take enormous proportions, they appear on the face highlighting their contrast with the very marked cyanosis. Dyspnea, with 44 breaths per minute. On August 27th edemas are enormous, intense cyanosis. Pulse is 130 per minute, respirations are 30 per minute. Blood pressure is 13cm Hg, with Potain's device. The patient is marked in a stupor, indifferent to his surroundings, gasping, dyspneic, and he only reacts when his big and painful liver is felt or hit, edemas and cyanosis have increased ... On August 27th the red blood cell count accuses 7.04 million per mm³. On August 29th the patient remains in the same conditions, more drowsy than ever, continuing until 11 pm, when almost imperceptibly he passed from his heavy sleep to death.

Autopsy protocol:

Rigor mortis, persistent edemas very accentuated in the lower limbs. Lungs: upper lobes crackle to pressure, presenting very distended gallbladder

edges ... the lower lobes enlarged, they crackle little to pressure and from the cut gets out bloody fluid in quantity. The cut surface of both lungs are somewhat dilated bronchi, thickened walls, surrounded by grayish white areas, of which leave streaks crossing the parenchyma in all directions, this disposition is more pronounced in the lower lobe. It is noted widespread bronchopulmonary sclerosis.

Heart: enlarged, it weighs 480grams, the right ventricle has very thick its walls, the right atrium is large and thickened, the tricuspid valve orifice is normal, there is not disorder at all in the valve. Normal left ventricle, no valvular damage whatsoever.

Abdomen: liver is enlarged, presenting the appearance of nutmeg ...

Brain: congested, edematous, dropsy of the lateral ventricles'...

It was a patient with a chronic broncho-pulmonary history, to which dyspnea, ankle edema and cyanosis of the face and limbs had been added a year and a half before admission.

Ayerza realized the important relationship between chronic lung disease and heart disease, and strongly establishing the relationship between them, he built a very appropriate nomenclature that since it has spread worldwide, also associated with his name.

Subsequent works merely confirmed Ayersa's initial assumption and they broke down a number of lung conditions (vascular, interstitial, bronchogenic, and so on.), to which Argentine School of Physiology and Clinical Medicine contributed very significantly.

The reading of the clinical history of the first 'black heart' reveals several interesting facts. First, and back in 1901, Ayerza measured blood pressure in his patients with Potain's device. Second, in his service there were routine blood tests.

Apparently, Ayerza gave no more importance to his contribution and certainly he did not imagine the controversy that he would generate among his disciples and followers. Anyway, his pathogenic hypothesis that did to establish the primitive process in the lung parenchyma, was correct, at least for most cases.

Ayerza died in 1918, at age 57 years. Among his disciples may be reminded Arrillaga, Castex, Escudero, Sicardi, Staffieri and Waldorp.

Among them, Francisco C. Arrillaga was devoted almost exclusively to the clinical cardiology. In 1925, he returned to the subject of black heart with a volume entitled 'Pulmonary Arthritis'. In 1929, he published a monograph on heart failure, with a foreword by French cardiologist Henri Vaquez. In the thirties he was one of the obliged consultants required in heart diseases, and we know that Professor Pedro Chutro required his opinion when the narrow mitral, which he suffered, began to limit his professional activity. He was Titular Professor at the Third Cathedral of Medical Clinic until 1951, the year of his death.

But as well as, Ayersa was the first to be recognized

as the pioneer of the Argentine cardiovascular clinic, it is also fair to remember those that with theses and monographs cultivated this field of medicine. With respect to heart disease, they deserve to be mentioned Pedro A. Pardo's thesis, in 1854, entitled: 'From the simple hypertrophy of the heart, and accompanied by damage to the valves', 47 pages; and Santo Cavaría's one, in 1857, 'Pulmonary Emphysema', 31 pages. It is remarkable Julian Aguilar's thesis, in 1877, 'Plotting of the pulse', 39 pages, and 4 tables. In 1879, two theses were presented that demonstrate the knowledge we had and the interest in cardiac pathology, Nicanor Basavilbaso's, entitled 'Considerations on rheumatic endocarditis', 76 pages, and Enrique R. Revilla's: 'Considerations on a case of neuritis of the cardiac plexus. Angiopectoris synonymy ... cardiac ischemia', 61 pages.

In 1880, we found other two theses related to our subject, whose titles are evocative, Eduardo Pardo's, 'Regarding hygienic regimen in chronic cardiovascular disease,' and Eufemio Uballes's, 'The pulse in mitral insufficiency'.

In the field of peripheral vascular disease we also find indicative monographs of level of knowledge. In 1833, Indalecio Cortinez presents his thesis, 40-pages, 'Dissertation on the time on which limbs should be amputated', and important and controversial topic today as 144 years ago. In 1835, Joaquín Rivero presented a monograph on 'Aneurysm', the first one we have recorded on this topic. In 1843, Eulogio A. Basin becoming the first Argentine contribution of venous pathology: 'Four words about phlebitis'. A year later, in 1844, another evocative title, 'Blood alterations because of fibrin defects', Joseph B. Bárcena. In 1862, Vicente Ruiz Moreno brings about a current topic: 'Spontaneous aneurysm of the popliteal artery'.

By the late nineteenth century there are some contributions on pediatric cardiology.

In 1893, Amador L. Lucero presents 'Some considerations on pediatric cardiopatology'. Rodolfo Lemos, in 1897, on 'Narrowing of the pulmonary artery'. In 1900, Saturnino Albarracian, on 'Cyanosis in congenital heart disease'.

Other theses that deserve to be remembered are Luis Beafiore's, 1891, 'Study on infectious endocarditis'; Carlos Diana's, 1899, 'The lungs of patients with heart disease' and a very suggestive one of Diocles Gomez, 1901: 'Emotions, intellectual and physical fatigue as causes of heart disease'.

As in these monographs may be traced the origins of our cardioangiology, and in Ayerza and Arrillaga's contribution, the first attempt at an original nosologic separation, there are two sides through which the study of cardiovascular disease is canalized in our country. One was clinic and it can be personified in Professor Tiburcio Padilla, and the other was set up around the School of Physiology led by Bernardo Houssay, our first Nobel Prize in Medicine.

Tiburcio Padilla earned his medical degree very young, at age 21 years and went on to serve as added physician of Room IX of Hospital de Clinicas. This service was the seat of the First Cathedra of Semiology, of which his Titular was Professor Gregorio Araoz Alfaro. Padilla found him as an inspirator and a teacher, who started him in teaching. In 1923, he reached to Substitutive Professor and in 1931, Titular Professor of Semiology and Propaedeutic Clinic.

Padilla was a pioneer of Argentine cardiology, one of the first to rank and give gleam to teaching and practice of this specialty. He showed a precocious interest in heart disease. In 1921, he published a work on the slow endocarditis and in 1922, two papers on clinical electrocardiography. In 1924, he published his book 'Electrocardiography', veritable treaty on the subject, consisting of 670 pages and it is the first work of this kind in our country. It would take too long to record all his scientific publications, we will only mention one because of its significance: 'Survey of the heart' which he did in 1930, with his disciples P. Cossio, and I. Berconsky.

In addition to these contributions, Padilla had the merit to simplify and make accessible to the student and the practicing physician the cardiological knowledges. He also wrote a beautiful book of disclosure for heart patients, 'whose sole purpose, as he himself says in the preface, is trying to be helpful, bringing them comfort, hope, or an explanation'. This book, entitled 'What hypertensive, rheumatic and cardiac patient should know', even though it is aimed at the heart patients and family, it is even profitable reading for the physician. It is Written in clear and simple style, is full of common sense comments. It also has a cultural and historical aspect that not only shows Padilla as cardiologist, but also as a human and humanist doctor in the most ancient hippocratic clinical tradition.

The young medical generation owe a debt of gratitude to Professor Padilla, as well as contributing to the development of Argentine cardiology and his zeal to raise the education level of semiology, he was the creator of medical residencies in our country. He implemented, in fact, in 1945, in Room IV of the Hospital de Clinicas, the positions of major and minor resident physician.

Bernardo A. Houssay began the study of physiology with Professor Horacio Piñeiro, to whom succeeded in the Cathedra, in 1919. He showed a precocious interest in cardiology, as his academic thesis in 1916, went round about graphic registration of the venous pulse. Among his many and recognized merits, is the one to have created a high level School of Physiology, which achieved international fame and to educate disciples who in turn raised our cardiology with their contributions. Just mention Oscar Orias, who held the Cathedra of Physiology in Cordoba and he was the first in our country to do a systematic study of heart sounds with graphic records and investigate

the effects of experimental coronary occlusion, and Eduardo Braun Menendez, who led the team that clarified the mechanism of nephrogenic hypertension and isolated angiotensin.

So important as these investigations, was the scientific spirit that Houssay attempted to implement in our medicine, allowing access to his Institute of Physiology to clinical cardiologists to be trained in the use of instrumental examinations at that time just made their appearance. Among them, only to remember the missing, we will mention Antonio Battro, a Mariano Castex's disciple. Battro was one of the pioneers in the study of cardiac arrhythmias, and his monograph, whose first edition dates from 1936, still available at a profit. He was one of the first in the world with his disciple H. Bidoggia, in studying the intracavitary electrocardiogram in man.

In 1948, Professor Pedro Cossio, in collaboration with Dr. Isidro Perianes, at that time internal physician of the Hospital, he carried out two important contributions to the treatment of left irreducible ventricular failure: tricuspid valvotomy and ligation of the inferior vena cava, which, at that time, were a real relief for those patients suffering from orthopnea

that did not give up to digitalis or diuretic treatment.

With the forced retirement of Professor Cossio for purely political reasons, a period was closed in which clinical research in cardiology had given surprising results taking into account the scarcity of resources that were available at that time.

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