Charles Foix (1882–1927)

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Charles Foix, arguably the first modern era stroke neurologist, was born in a small village in Southern France. A physician's son, he came to Paris to study medicine and spent his entire hospital career within the Paris hospital system, except for the years during World War I when he fought for France. In 1919 he was named hospital physician at the Salpêtrière and was made an Agrégé to the hospital in 1923, a position that he held until his premature death at age 45. Foix's career overlapped with that of Jean Martin Charcot, Jules Dejerine, and Pierre Marie, all of whom were active at the Salpêtrière and the University of Paris during Foix's time at the hospital. During his career, he collaborated with Guillain and Alajouanine, both esteemed Parisian colleagues, and with Nicolesco, a leader in Rumanian neurology.

Foix was not a native Parisian in a city that did not always welcome outsiders from small villages. His voice was described as warm, vibrant, and captivating [6], and his demeanor was aristocratic. Colleagues were impressed by his remarkable charm, honesty and straightforward demeanor, and by his modesty. "Gentleness and kindness endeared him to his friends and students [6]." He was extremely popular with students and junior and senior faculty alike; his teaching conferences became very popular and well attended. He was a compulsive and effective diagnostician with few peers. Roussy, a long term colleague wrote: "In his hospital ward when he examined a patient, how many times would he forget the time and not leave the consultation room until the diagnosis had been made or the sign searched for was detected [8]."

Foix was quite versatile in his interests and abilities. Although mostly interested medically in neurological conditions, he was also active in general medical problems. His first research studies concerned the leukocyte-activating effects of body fluids and haemolysis. After the First World War, he was placed in charge of a tuberculosis ward. He delivered a very well received series of lectures on the splenic anaemias. Also, he wrote poetry and lyrics for songs, being well versed in literature and music.

Foix's major neurological contributions were in the field of cerebrovascular anatomy and disease, but he and his colleagues made notable contributions in other aspects of neurology. Nicolesco and Foix published a volume on the anatomy of the midbrain and the pathological changes in

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parkinsonism [3]. They were among the first to recognize the characteristic changes in the substantia nigra in that condition. Foix and Théophile Alajouanine described a necrotizing myelopathy [4], a condition that was known by the names of the authors until spinal dural arteriovenous fistulas were identified as its usual cause [2]. Foix was also among the first to analyze the pathological anatomy in patients with palatal myoclonus and to recognize the associated involvement of the central tegmental tract and hypertrophy of the inferior olive in the medulla oblongata. Foix and Sicard described an albumino-cytological dissociation in the cerebrospinal fluid in patients with spinal cord compression [9].

Foix will undoubtedly be best remembered for his cerebrovascular work, especially concerning cerebrovascular anatomy and anatomico-clinical-pathological correlations. Hillemand, one of Foix's major collaborators, cited an initial observation in the neuropathology laboratory that stimulated Foix's vascular studies [7]. Foix noted the frequent coexistence of thalamic infarction and 'ramollissements' (softenings) of the inferior portions of the occipital and temporal lobes. Foix knew of the occurrence and findings in the 'thalamic syndrome' previously described by Dejerine and Roussy, but those authors had not commented on the vascular causes or vascular anatomy of the supply vessels. Foix then dissected the blood supply and found that the thalamus and posterior cerebral hemispheres were supplied by the posterior cerebral arteries, the terminal branches of the basilar artery. This led him, his colleagues, and students to systematically dissect the main intracranial arteries that supplied the cerebral hemispheres, brainstem, and cerebellum. Foix and his colleagues published reports during a whirlwind period between 1923 and 1927 on the anterior, middle, anterior choroidal, and posterior cerebral arteries and their regions of supply, and the clinical syndromes that accompany occlusion of these arteries. Branches of these arteries with their special zones of irrigation were very well illustrated, often with comments on the symptoms and signs in patients with restricted infarcts in these territories. He and his colleagues also reported on the blood supply and syndromes related to pontine, medullary, and thalamic infarction [1].

Foix died very prematurely at the age of 45, probably because of an acute abdominal disorder thought to represent

ruptured appendicitis. One of his major contributions occurred only a few weeks before his death. Foix, Hillemand and Ley presented a preliminary report to the Medical Society of the Hospitals of Paris on the vascular pathology found in arteries supplying regions of brain softenings [5]. Among 56 cases, the artery supplying the infarct was completely occluded in only 12 patients and subtotally occluded in 14, but the supply artery was widely patent in 30 patients. Foix and his colleagues proposed four possible explanations for the frequent lack of arterial occlusion at autopsy: (1) occlusion might follow brain softening and might have developed later, (2) embolism with passage of embolic material by the time of autopsy, (3) insufficiency ('l'insuffisance cardio-artérielle'), i.e., a more proximally located circulatory failure, and (4) vasospasm ('spasme artérielle') [5]. This was the first questioning of the cause of brain infarcts found at autopsy.

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