Jules Froment (1878–1946)

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Jules Froment is one of the most distinguished French neurologists of the first half of the 20th century [2, 3]. He was born in Lyon and studied medicine at Lyon University Hospitals. Several scientists contributed to the development of neurology in Lyon in the late 19th century. Joseph Arthaud (1813–1883) was the first Professor of Mental Diseases and Head of the Department of Neuropsychiatry at Antiquaille Hospital, thereafter at Vinatier Hospital. His successor at Antiquaille Hospital was Maurice Lannois (1856–1942), who studied neurootology and contributed to the description of Gradenigo–Lannois syndrome (abducens palsy and trigeminal neuralgia due to acute suppurative otitis with petrous apicitis). At the end of the 19th century and the beginning of the 20th century, Eugene Devic (1858–1930) was chief of a department of medicine at

Croix-Rousse Hospital. In 1894, he wrote his famous report on neuromyelitis optica, now called Devic's disease.

Froment began his residency in 1901 and was influenced by the pioneers mentioned above. He passed his medical thesis in 1906, on the worsening effect of Graves' disease on valvular heart disease, became hospital consultant in 1911 and associate professor in 1913. During World War I, Froment went to Paris where he worked at Pitié-Salpêtrière Hospital with Joseph Babinski. In 1918, he returned to Lyon and devoted himself entirely to neurology. He became Chief of the Department of Medicine at Croix-Rousse Hospital in 1919 and subsequently at Hôtel-Dieu Hospital in 1921. In December 1926, Froment was stabbed in the chest by a delirious patient but was fortunately rescued by his colleagues from the surgical department. Having become Professor of Internal Pathology in 1927, his department moved in 1933 to the new hospital called Grange Blanche and later called Edouard Herriot Hospital. He was appointed Professor of Medicine in 1937 and retired in 1945.

Froment's son, Roger (1907–1984), became a famous Professor of Cardiology in France during the third quarter of the 20th century. Among Froment's colleagues or pupils in neurology in Lyon were Louis Bériel (1878–1965); André Devic (1888–1977), Eugène Devic's son; Jean Dechaume (1896–1968); and Paul F. Girard (1905–1989). Froment could observe the development of neurosurgery in his own hospital. René Leriche (1879–1955) was the first neurosurgeon in Lyon. He became Professor in Strasbourg in 1924, then in Lyon in 1932 and finally at the Collège de France in Paris. Leriche described the—now eponymous—syndrome of bilateral intermittent claudication and impotence due to distal aortic occlusion and founded sympathetic nerve and pain neurosurgery. His pupil Pierre Wertheimer (1892–1982) helped him create the

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Department of Neurosurgery in Lyon and founded the French Neurosurgical Society in 1949.

Jules Froment contributed much to neurology. From 1914 to 1918, while in Paris, he devoted his interest to peripheral nerve palsies in war-injured patients. In 1915, he described the classical Froment's newspaper sign, also known as Froment's thumb sign, which is still used to diagnose ulnar nerve palsies [4, 5]. Froment worked with Babinski on hysteria, pithiatism and nervous disorders in the context of war-related trauma, known as the Babinski-Froment or physiopathic syndrome [1], corresponding with what nowadays is called post-traumatic stress disorder or reflex sympathetic dystrophy. Between 1918 and 1945, Froment published important reports on language and speech disorders, normal and pathological gait and above all on parkinsonism [2, 3, 6]. During the 1920s, he dedicated his research to the analysis of resting tremor and rigidity observed in Parkinson's disease but also in post-encephalitic parkinsonian syndromes [7–10]. Froment studied the rigidity of the wrist at rest, in the sitting position as well as in stable and unstable upright postures, both clinically and with a myograph. With Gardère, he described enhanced resistance to passive movements of a limb about a joint that can be detected specifically when there is a voluntary action of a contralateral body part. This is now known as Froment's maneuver or the activation or facilitation test. Froment showed that parkinsonian rigidity diminishes, vanishes, or increases depending on the posture of the body. For example, it increases during the Romberg test, gaze deviation, and auditory attention tests. He suggested that in Parkinson's disease "maintenance stabilization" of the body was impaired and that "reactive stabilization" became the operative mode in the control of muscle tone. He considered that "rigidification" compensated for the forces of gravity. Today, the Froment maneuver is still useful to detect latent rigidity in the early diagnosis of Parkinson's disease. It is formalized in the

unified Parkinson's disease rating scale or UPDRS, in which the mildest level of rigidity is elicited only by the activation of the contralateral body part. Furthermore, with the renaissance during the last decade of the neurosurgical treatment of Parkinson's disease, Froment's maneuver is regularly used to assess the effect on parkinsonian rigidity of deep brain stimulation of the subthalamic nucleus, in patients undergoing stereotactic surgery under local anesthesia.

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