



Editorial

The Babinski sign



In this issue the accuracy of the iconic Babinski sign in the identification of pyramidal tract dysfunction has been re-evaluated. Less than a decade ago the question was posed by Miller & Johnson [1] "Should the Babinski sign be part of the routine neurologic examination?" This paper brought forth an outcry of criticism from neurology traditionalists including a colorful characterization as C.R.A.P. (circular reasoning and anti-intellectual pomposity) by the inimitable William Landau in an accompanying Editorial [2]. Their defense from these criticisms was that they were applying rigorous science to justify specific components of the neurologic examination and "not relying on aphorisms from legendary neurologists or on expectations based on pathophysiological arguments". They were demanding rigorous science.

The legendary neurologist, Joseph Jules Francois Felix Babinski, is deserving of a reintroduction to a younger generation so immersed in neuroimaging that they often fail to properly elicit or document the plantar response. Maybe they are persuaded, given the time restraints on a contemporary physical examination, it is not worth the effort! Babinski was the son of Polish immigrants to France, who as a student of medicine came to work with Charcot at the Salpetriere in Paris. He received his medical degree in 1884 for which he submitted a thesis on multiple sclerosis. He was unfortunate to have been caught up in the intense rivalry that had developed between Charcot and former student Bouchard, and failed to be appointed *Professeur agrege*, which halted his advancement in the French academic system. Instead, in 1895, he became *chef de Clinique* at the neighboring *Hopital de la Pitie* until his retirement in 1922. It was in 1896 that his concise presentation at the *Societe de Biologie* described the "*phenomene des orteils*" [3]. The normal flexion of the toes on stimulating the sole of the foot is replaced by extension of the great toe in the presence of injury to the cortico-spinal tract. He later modified his description to include fanning of the toes. These observations were widely accepted internationally to become a routine part of the neurological examination. Still later, the concept of an extensor plantar response has been recognized as a reflex involving not only the toes but also other lower limb muscles recruited to produce leg flexion, (triple response or flexion synergy) [4].

In spite of its hallowed status, is there validity to criticism that the Babinski sign may lack diagnostic accuracy? In the cohort study by Jaramillo et al. presented in this issue, a broad spectrum of patients with suspected pyramidal tract dysfunction was evaluated employing a sensible composite independent reference standard. Incorporation bias was avoided by excluding consideration of the Babinski sign in the reference standard. Investigators performed and interpreted both the index test and the reference standards in a masked fashion. Not surprisingly, the Babinski sign was confirmed to have a very high specificity for pyramidal tract dysfunction. When present, it was a highly accurate "rule-in" finding, justifying its value in the clinical examination. By contrast, its sensitivity was modest indicating that its absence did not rule out PTD and where suspected, further assessment is indicated. The confidence traditionally placed by clinicians on this simple test is justified; albeit, with the preceding caveat.

Joseph Babinski, who is buried in the *Cimetiere des Champeau* at Montmorency near Paris, can continue to rest in peace!

References

- [1] Miller TM, Johnston SC. Should the Babinski sign be part of the routine neurologic examination? *Neurology* 2005;65:1165–8.
- [2] Landau WM. Plantar reflex amusement: misuse, ruse, disuse, and abuse. *Neurology* 2005;65(no.: 8):1150–1 [October 25].
- [3] Babinski J. Du phénomène des orteils et de sa valeur sémiologique. *Sem Méd* 1898;18:321–2.
- [4] Van Gijn J. Babinski response: stimulus and effector. *J Neurol Neurosurg Psychiatry* 1975;38:180–6.

Austin J. Sumner¹

LSUHSC, Department of Neurology, New Orleans, La, United States

E-mail address: asumner@lsuhsc.edu.

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¹ Tel.: +1 504 568 4082; fax: +1 504 568 7130.