



Paul Hoffmann (1884–1962 AD) and Jules Tinel (1879–1952 AD), and their legacy to neuroscience: the Hoffmann-Tinel sign

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Introduction

The eponymous “Hoffmann-Tinel sign” remembers two physicians who contributed to defining the phenomenon in 1915 but who were on opposing sides during the First World War: Paul Hoffmann (1884–1962), a German, and Jules Tinel (1879–1952), a Frenchman [1–3]. In the medical world, this test is called Tinel’s test [4]. However, Hoffman first described it in March of 1915 as “light percussion of a finger during extension as a diagnostic maneuver produces a pins and needles feeling” [1–3]. Later, in October 1915, Tinel described it as “application of pressure to an injured nerve trunk induces a sensation of tingling.” Unfortunately, Hoffmann and Tinel were not aware of each other’s scientific papers, possibly owing to a lack of communication during wartime [3].

Paul Hoffmann was born in Dorpat, Russia, in 1884 [3], the son of a German physician, and received his medical degree from Berlin University in 1909 [3]. At first, his work focused on the physiological mechanism of reflex testing and on muscle action potentials [3–5]. In 1917, Hoffmann was appointed

as Associate Professor at Berlin University, and he was the Director of the Physiology Institute of Freiburg University between 1924 and 1954 (Fig. 1 and cover) [3–5]. Hoffmann described the sign for evaluating nerve regeneration and noted that a paresthesia signaled the presence of regenerated nerve fibers [5].

Jules Tinel was born in Rouen, France, in 1879 [4, 5]. He received his medical degree in Rouen [3]. He researched various neurological diseases in the Department of Neurology at Henri-Rousselle Hospital in Paris [4, 5]. His mentors included Troisier and Dejerine. Tinel published two famous books entitled “Nerve Wounds” and “The Vegetative Nervous System” [3–5].

The Hoffmann-Tinel sign

The Hoffmann-Tinel sign is paresthesia in the distal cutaneous distribution of an injured peripheral nerve evoked by tapping on the nerve more proximally [1–3]. This sign indicates the compression or regeneration of peripheral nerve fibers [1–3, 5]. The sign is useful for predicting nerve regeneration to ascertain whether the paresthesia produced shows a progression from proximal to distal across the site of the lesion until the most distal point at which tingling is reported by the patient is determined [3, 5]. Results of the accuracy of the Hoffmann-Tinel sign in diagnosis vary widely in sensitivity (49 to 84%) and specificity (95 to 99%) [5]. Absence of the Hoffmann-Tinel sign as a false negative despite progressive axonal loss is possible because an entrapped nerve is compressed. For this reason, a negative test does not necessarily rule out the diagnosis. Parenthetically, this sign should not be confused with the “Hoffmann sign” described by neurologist Johann Hoffmann (1857–1919). This sign, which notes pyramidal tract disease, consists of quick flexion of the thumb and other fingers when the index finger is stretched or snapped.

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Fig. 1 and cover Drs. Paul Hoffman (left) and Jules Tinel (right) watching as the Hoffmann-Tinel sign is elicited by tapping here over the median nerve at the wrist

Conclusions

Hoffmann and Tinel should be remembered for contributing to our current understanding of peripheral nerve regeneration/compression [2].

Compliance with ethical standards

Conflict of interest The author has no conflicts of interest.

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