

Traction Tinel Sign

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J Hand Microsurg 2016;8:125–126.

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In 1915, Tinel described a tingling sensation or a formication sign produced by slight percussion of a nerve trunk following an injury.¹ The sensation radiates into the cutaneous distribution of the specific nerve and signifies the presence of regenerating nerve fibers.²

In patients with suspected recurrent carpal or cubital tunnel syndromes, apart from the classical way of percussion from distal to proximal along the course of the nerve, we have observed reproduction of Tinel's sign by active movement of the affected joints. In recurrent carpal tunnel syndrome, we ask the patient to move repeatedly from maximal wrist extension with the fingers fully extended to maximal wrist flexion while making a fist. In recurrent cubital tunnel syndrome, we ask the patient to move the elbow repeatedly from maximal extension to maximal flexion.

We postulate that scarring around a nerve restricts its excursion and prevents normal nerve gliding. By moving the joint, a tethered nerve may undergo transient deformation or elongation resulting in mechanical constriction of the scarred nerve. This in turn would lead to reproduction of tingling sensation, similar to that elicited by percussion of the nerve. We regard this as an indication of a scarred nerve and name the clinical test, 'Traction Tinel Sign'.

We retrospectively reviewed 21 patients with 4 to 18 month follow-up, who underwent revision surgery. Ten revision carpal tunnel decompressions and eleven revision cubital tunnel decompressions over the past 2 years were assessed. Eighteen reported a positive traction Tinel's sign preoperatively, with all these nerves found to be encased in scar tissue with adhesions. Three did not show a positive 'Traction Tinel Sign' with one of these nerves being found to be ischemic. We have found Traction Tinel Sign to be 90% sensitive and 100% specific when diagnosing scarring around nerves in patients with recurrent symptoms of nerve entrapment. Sixteen reported resolution of the sign following revision decompression.

Traction Tinel Sign is a useful and reliable adjunct to clinical assessment of recurrent peripheral nerve entrapments.

References

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received
April 17, 2016
accepted
June 24, 2016
published online
July 21, 2016

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DOI <http://dx.doi.org/10.1055/s-0036-1586139>.
ISSN 0974-3227.