

Clinical Question: In the athletic population, is the provocative test more accurate in diagnosing carpal tunnel syndrome compared to Phalen's test?

Goloborod'ko S. Provocative test for carpal tunnel syndrome. *J Hand Ther.* 2004; 17:344-348

Carpal tunnel syndrome (CTS) is a condition that plagues people of all ages and activity levels. There is a fairly extensive battery of tests available to diagnose this condition but most of them lack acceptable sensitivity and specificity values. Therefore, the purpose of this study was to design and assess the validity of a new provocative test for carpal tunnel syndrome and to compare its diagnostic accuracy values to those of a few well-known CTS tests. The study investigated an experimental group of 41 hands and a matched control group whose subjects had no history of CTS or other conditions that may have affected the results of the study. The subjects chosen to be in the experimental group all demonstrated characteristic signs and symptoms of CTS including night pain, numbness, hand weakness and paresthesia along the median nerve distribution. The investigators performed several tests on the subjects including the two versions of Phalen's test, the Tinel-Hoffman test, the postural provocation test and the new provocative test. The provocative test is performed by mechanically pushing the lunate into the carpal tunnel. If symptoms of CTS are reproduced after holding this position for a minute then the test is considered positive. All subjects in the experimental group underwent a surgical release, which resolved the symptoms in all 41 hands, verifying the presence of CTS in all subjects. The surgical release was considered the gold standard for CTS diagnosis in this study. The results of the tests after being performed on both the experimental group and the control group were analyzed to determine the sensitivity, specificity and both positive and negative predictive values for all the tests being investigated. The new provocative test had the highest sensitivity and specificity values of all the tests (98%), which illustrates its ability to more accurately diagnose carpal tunnel syndrome than either version of Phalen's test.

The evidence presented in this study qualifies it as a Level IV diagnostic case-control study. Even though the investigator feels that the surgical release is a criterion standard for diagnosing CTS, I am not sure if it can be considered a true "gold standard". The results of this study clearly answered my clinical question and illustrated that the provocative test has better diagnostic values than Phalen's test. I understand however, that some bias may have been introduced due to fact that the author is the one who developed this new test and more studies should be performed in the future to determine if this test is truly valid and reliable. I feel that the results of this study are clinically important because they introduce a new test for CTS that can be used to make a definitive diagnosis when used with one or two other tests. This will reduce the evaluation time and the patients discomfort and allow the athletic trainer to administer treatment or to make a prompt referral. I feel that it is important for our patients/athletes to understand the diagnostic value of the tests that are being used to assess their injuries. Athletes aren't always aware of how confident (or unconfident) we are in our diagnoses and I think they should understand how we are reaching our decisions and why we feel it's necessary for them to undergo certain treatment or to seek further medical attention.