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A study to further develop and refine Carpal Tunnel Syndrome (CTS) nerve conduction grading tool

Abstract:

The severity of carpal tunnel syndrome (CTS) may be categorised in a number of ways utilising one of a range of presently available grading tools. The grading systems proposed by Bland and Padua are the most commonly used, however, both have limitations, which are discussed in detail in this paper.The aim of this research is to establish, using the best available evidence, a clinically appropriate revision of the current CTS nerve conduction grading tool, and to compare with existing grading tools used in UK Neurophysiology clinics. The revised scale is designed from a clinical physiologist perspective and based on the numerical values of nerve conduction findings. In contrast to Bland's (with grading of 1 to 6), the proposed revised grading system is based on more nuanced, descriptive categories, ranging from Normal to Early, Mild Sensory, Mild Sensory Motor, Moderate Sensory, Moderate Sensory Motor, Severe Sensory Motor, Extremely Severe Sensory Motor, and Complete absence. An additional two categories of clinical grading are therefore proposed (Graded 1-8).

Method: A total of 1123 patients (2246 hands) were included in this study, with the aim of evaluating the revised grading system. Data was collected based on the extensive and detailed grading systems previously described by Bland and Padua.The tests were performed by a qualified clinical physiologist (Neurophysiology) using a Keypoint 9033A07 machine, used in line with departmental protocol (peripheral protocol1, 2015). All data was recorded numerically to ensure methodological reliability.

Result: Of the 2246 patients' hands tested, the nerve conduction was graded as normal in 968 hands; nerve conduction showed early changes in 271 hands; mild sensory changes in 215 hands, mild changes in both motor and sensory response in 51 hands; moderate sensory changes in 134 hands; moderate sensory and motor changes in 356 hands; severe changes in motor and sensory responses in 204 hands; extremely severe sensory and motor changes in 33 hands and complete absence of response in 14 hands.

Biography

Salim Wali Mohammad Hirani studied BSc in Karachi University, Pakistan in 1990.He Reg. Technologist from ECNE board UK in 1999. He had completed his on the job training in the field of Physiological Measurement services of one year 6 months from The Aga Khan University Hospital, Karachi Pakistan in 1989. He registered with RCCP. He has almost 28 years' experience in Neurophysiology and 5 years in Cardiopulmonary field. He worked in three different countries in the field of Neurophysiology. He established a new Neurophysiology department in Torbay Hospital. His paper on Refine grading of CTS published in MBC open access journal which achieve great welcome. His next paper on grading of ulnar nerve at elbow published in Research Gate and is almost ready for publication in other journal. Two other research is under process.