

Occupation and its association with Carpal Tunnel syndrome- A Review

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Abstract

Carpal tunnel syndrome (CTS) is a common problem with estimated annual incidence rate of 0.5-5.1 per 1000. Its incidence in the workplace has reached epidemic proportions, comprising 40.8 percent of all upper extremity repetitive motion. Certain occupational activities also carry an increased risk of CTS. A number of etiological factors have been suggested to be potentially etiologic for CTS. These include repetitive prolonged hand intensive activities, forceful exertions awkward or static posture, vibration, temperature extremes and localized mechanical stress. Referred literature was collected up to June 2011 mentioning carpal tunnel syndrome and occupation and textbook of orthopaedic physiotherapy third edition by Robert Donateli and Wooden. Most of the articles dealt with prevalence, diagnosis, and description of carpal tunnel syndrome. Various articles from the collected data were based on occupational studies. The references were further supplemented by systematic search on Pubmed, Google and Pedro with keywords occupation, incidence, and prevalence with carpal tunnel syndrome. Several specific occupational studies that had been reviewed in these were found to deal with meat, cut metal workers, supermarket workers, meat industry workers, slaughter house, assembly line workers, meat and fish process, manufacturing, construction and agriculture workers, musicians, ski manufacturing, frozen food factory employees, repetitive industrial work groups, poultry processing workers, heavy wrist movements and heavy manual workers, packaging industry workers, footwear factory, grocery store workers etc. These studies were included in the review. In summary, a useful body of research now supports and extends previous conclusions that certain occupations involving wrist activities materially increases the risk of carpal tunnel syndrome. Prolonged exposure to highly repetitive flexion and extension of the wrist should be avoided.

KEY WORDS: Carpal Tunnel Syndrome, Occupation, Repetitive Flexion, Repetitive Extension

Introduction

Carpal tunnel syndrome (CTS) is defined as a complex of symptoms arising from compression of the median nerve at the carpal tunnel. Symptoms of median nerve compression include pain, numbness, or tingling on the anterior surface of the index, middle, or radial half of the ring finger. It is often associated with weakness of hand grip or nocturnal symptoms including hand or arm pain and numbness. Provocative physical examination techniques such as Tinel's sign, Phalen's sign, and a two point discrimination test have been used to

support the diagnosis of this condition. Median nerve entrapment is the pathological process that causes symptoms of CTS.

Carpal tunnel syndrome is a common problem with estimated annual incidence rate of 0.5-5.1 per 1000. Its incidence in the workplace has reached epidemic proportions, comprising 40.8 percent of all upper extremity repetitive motion disorders as reported by the *Bureau of Labor Statistics* in 1994. It was first discovered in 1947 that CTS was related to occupation, when *Brian et al (1947)* reported approximately 6 cases of work –