The Magnitude of Carpal Tunnel Syndrome Among Filipino Dental Workers and Its Prevention

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Abstract

Keywords: Repetitive strength injury, carpal, tunnel syndrome, ergonomic, preventative program.

Carpal tunnel syndrome (CTS) is a musculoskeletal disorder of the upper extremity characterized by inflammation and swelling in the tendons that runs through the tunnel in the anterior wrist joint. The resulting compression of the median nerve in the narrow tunnel causes numbness and/or pain of the first three fingers. The syndrome categorized by the World Health Organization as a work related problem and is caused by high frequency movements and lack of rest period. It is one of the most frequent causes of repetitive strain injury. When CTS afflicts a young productive age group the health, social and economic costs may be staggering especially for a developing country like the Philippines.

Stockstil(1) reports a prevalence of 25% of carpal tunnel syndrome (CTS) the most common of RSI, among dental hygienist in the USA. A study done in Ohio, USA (2) mentioned that 75% of dental hygienist reported hand problems and 56% probably had classic symptoms of CTS. Hamman reports that forty-seven (47%) of CTS in the general population was work related.

A Philippine company engaged in the manufacture and export of artificial teeth had commissioned a study to look into the problem of hand pains of its employees who have been invariably diagnosed to have CTS. The company has 65 female workers, aged 18-26, assigned to three work stations called Sorting, Grinding and Controlling. Their symptoms were described as nangangalat, namamanhid, mabigat, tinutusok, may kuryente, tumutibok, gumuguhi, mainit. Using clinical parameters 54-67% of them had CTS with 60% having bilateral complaints. The incidence peaked at 4-6 years of employment while severe pain was observed usually on the 5th year of employment. Statistical analysis showed a strong association between vibratory injury and CTS symptoms (OR 1.7).

The medical literature reveals various management options for CTS: oral corticosteroids (prednisone and prednisolone), local steroid injection, nonsteroidal anti-inflammatory drugs (NSAID) pyridoxine, diuretics splinting, nerve/tendon gliding exercise, ultra sound, endoscopic surgery, open carpal tunnel release, and internal neurolysis in conjunction with open carpal tunnel release. However, randomized controlled trials have demonstrated that only oral and local corticosteroids have beneficial effect in the short term. The rest of the treatment approaches continue to be given to CTS patients perhaps because all current modes of treatment are associated with very little or no harms.

Given the limited and unproved beneficial effects of the aforementioned treatment modalities, the best way to deal with the problem is to embark on a preventive program for CTS. Given the data obtained from the study, a thorough evaluation of the workplace, and the social realities obtaining in the country, the author of the study recommended the following measures: frequent work station rotation; a program aimed at the early detection of CTS, periodic break periods, ergonomic design of the workers’ work station (including redesigning and repositioning of teeth receptacles), use of a specially designed thermoplastic splint at work, and having some form of physical therapy within the confines of the room.