

A single case study on the impact of nutritional supplementation on cervical spondylosis

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Abstract: A 65-year-old female with a twelve year history of right-sided cervical spondylosis demonstrated an average 45.1% increase in pressure pain threshold meter readings in maximal tender points after two weeks supplementation with nutraceutical complex. In addition, total neck motion increased by 9.6 degrees (9.5%) in the sagittal plane, 7.1 degrees (8.7%) in the coronal plane and 2.8 degrees (1.7%) in the horizontal plane after two weeks of supplementation. Based on the results, no adverse events were reported with the consumption of dietary supplement. Essentially, supplementation of key nutrients were found to be an effective natural way to reduce both neck pain and stiffness, consequently avoiding any surgical interventions such as joint replacement or cartilage transplant surgeries.

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1. Case Report

Joint discomfort refers to pain, soreness, and stiffness in any of the body's joints. Occasionally, joint pain is due to the degeneration of cartilage in articular joints, as a result of aging or intense physical activity, such as the long-term mechanical stresses applied during exercise. Furthermore, injuries such as sprains, fractures, and dislocation may also contribute to joint pain. Joint pain can also occur due to certain disorders or other conditions such as arthritis, which result in movement problems. Joint stiffness and pain are among the common causes of chronic pain, which can be rather devastating and can reduce the quality of life of individuals who suffer from these conditions [1,2].

Painkillers and anti-inflammatory drugs have been extensively prescribed and used to help reduce and ease the symptoms of joint discomfort. However, the vast majority of these options have shown limited effectiveness or severe side effects in randomized controlled clinical trials [1-4]. Ultimately, the progression of joint stiffness and pain may require surgical interventions such as joint replacement or cartilage transplant surgeries. An alternative approach to address the issues associated with joint discomfort could be the use of nutritional supplements. The correct balance of nutrients may potentially stimulate the growth, repair, and maintenance of joint connective tissue.

A single-case study is presented of a 65-year-old female with a twelve year history of right-sided cervical spondylosis. During the patient's visit to the clinic, the pressure pain threshold (PPT) technique was used to measure deep muscular tissue sensitivity. Briefly, the PPT is placed perpendicularly over the

contact area. Even pressure is applied to increase the load by one kg/cm² per second. The patient is asked to indicate the point at which the sensation of pressure changes to tenderness. The patient was laid prone on the adjusting table with the headpiece tipped forward. In addition, to evaluate the total neck range of motion (ROM), the cervical ROM device was advocated.

A dietary supplementation was started for the patient for a period of two weeks which included two daily capsules each composed of vitamin MK7 0.01% (w/w), green-lipped mussel (*Perna canaliculus*) 46% (w/w), eggshell membrane powder 42% (w/w), vitamin D3 0.8% (w/w), vitamin C (calcium ascorbate dihydrate) 10% (w/w) and ginger root extract 0.1% (w/w) all provided as TRU MK7TM brand. A dietary questionnaire was administered during the course of study and revealed a fairly good supplement intake. The patient was not receiving any other treatment during the course of supplementation.

After two weeks, the post-treatment PPT average value was found to increase by 45.1% ($P < 0.001$). The average pre-treatment PPT value was recorded as 2.06 kg/cm² while the post treatment average value was recorded as 2.99 kg/cm². Additionally, total neck ROM values were significantly different before and after supplementation ($P < 0.001$). Total neck motion increased by 9.6 degrees (9.5%) in the sagittal plane, 7.1 degrees (8.7%) in the coronal plane and 2.8 degrees (1.7%) in the horizontal plane after two weeks of supplementation.

Based on these observations, the patient experienced a fairly swift improvement in both joint pain and stiffness. This observation could possibly be justified by the relative insufficiency of essential

nutrients in the patient's body. Given that treatment with the dietary supplement was well tolerated and found to improve joint functionality, this treatment could be useful in patients with joint health problems thereby enhancing the quality of life of individuals who experience joint discomfort and consequently avoiding any surgical interventions such as joint replacement or cartilage transplant surgeries.

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