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Effect of Osteopathic Visceral Manipulation on Pain, Cervical Range of Motion, and Upper Trapezius Muscle Activity in Patients with Chronic Nonspecific Neck Pain and Functional Dyspepsia: A Randomized, Double-Blind, Placebo-Controlled Pilot Study

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Abstract

Previous studies have reported that visceral disturbances can lead to increased musculoskeletal tension and pain in structures innervated from the corresponding spinal level through viscerosomatic reflexes. We designed a pilot randomised placebo-controlled study using placebo visceral manipulation as the control to evaluate the effect of osteopathic visceral manipulation (OVM) of the stomach and liver on pain, cervical mobility, and electromyographic activity of the upper trapezius (UT) muscle in individuals with nonspecific neck pain (NS-NP) and functional dyspepsia. Twenty-eight NS-NP patients were randomly assigned into two groups: treated with OVM (OVMG; n = 14) and treated with placebo visceral manipulation (PVMG; n = 14). The effects were evaluated immediately and 7 days after treatment through pain, cervical range, and electromyographic activity of the UT muscle. Significant effects were confirmed immediately after treatment (OVMG and PVMG) for numeric rating scale scores ($p < 0.001$) and pain area ($p < 0.001$). Significant increases in EMG amplitude were identified immediately and 7 days after treatment for the OVMG ($p < 0.001$). No differences were identified between the OVMG and the PVMG for cervical range of motion ($p > 0.05$). This study demonstrated that a single visceral mobilisation session for the stomach and liver reduces cervical pain and increases the amplitude of the EMG signal of the UT muscle immediately and 7 days after treatment in patients with nonspecific neck pain and functional dyspepsia.

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