

New Treatment Approach to Trigger Points

Star Trek lovers are familiar with the "Vulcan nerve pinch", a technique used by Dr. Spock to cause someone to lose consciousness. The technique was to pinch a pressure point at the base of the victim's neck but in fact, it's likely the pinch was in fact a trigger point (TrP) of the upper trapezius muscle. The upper trapezius muscle is the muscle along the top of the shoulder at the base of the neck (where the neck and shoulder meet).

Trigger points are defined as hyperirritable areas of tenderness in a muscle that when pressed or pinched can cause local and/or distant referred pain (e.g., someplace else down the arm). Trigger points can be active (currently already causing pain) or latent (only painful when pressed or pinched).

Physical Therapists often treat this problem using a variety of techniques that may be noninvasive or invasive. Noninvasive approaches include massage, stretching, and ultrasound. Invasive treatments include dry needling and corticosteroid injections. Dry needling refers to using needles to stimulate the trigger point without actually injecting any medication or other substances.

In this study, Physical Therapists from Tehran University of Medical Sciences in Iran use three different treatments for latent trigger points of the upper trapezius muscle. There were four total groups all together (phonophoresis, pressure release, ultrasound therapy, control group). Participants in each group were all women who had a positive trigger point of the upper trapezius.

Phonophoresis is a way to use ultrasound to push a topical corticosteroid (antiinflammatory ointment applied over the skin) through the skin into the muscle. Pressure release is the application of sustained pressure to the trigger point until pain is reduced.

Ultrasound therapy is the same as phonophoresis but without the corticosteroid cream -- just the sound waves applied over the surface of the skin but directed down toward the bone. The sound bounces back off the bone and creates heat to the muscle tissue. Of course, the control group received no treatment but was measured before and after just the same.

Before treatment, the Physical Therapist measured each woman's pain level, pain pressure threshold (PPT), and neck range of motion. These same measurements were taken after treatment and compared for each group. Pain pressure threshold was measured using a special device called a dual inclinometer. Pressure was applied to the trigger point until pain was created. The amount of pressure required to elicit pain was recorded as the pain pressure threshold.

This was the first time phonophoresis with corticosteroids has been used for the treatment of trigger points. No study using this specific approach has ever been reported before. The results showed that the women in all three treatment groups had decreased pain, decreased pain pressure thresholds, and improved neck motion. The control group stayed the same without improvement in any area.

The phonophoresis and pressure release techniques yielded better results than the ultrasound. Phonophoresis outperformed pressure release. The mechanisms by which these treatments work to reduce the effects of trigger points aren't entirely clear yet.

Some experts suggest the increase in blood flow to the area from phonophoresis helps clear out substances in the area that cause pain. Pressure release may help by lengthening the muscle fibers themselves. Once the pressure is removed, there is a release of antipain hormones (e.g., endorphins, enkephalins), thus blocking

pain and making it possible to move once again. Ultrasound may not have been as effective as phonophoresis or pressure release because a pulsed form of ultrasound was used that does not generate any heat to improve circulation.

The authors concluded that phonophoresis and pressure release are both good treatment techniques to relieve the pain and loss of motion caused by trigger points of the upper trapezius muscle. This is the first study to suggest the use of phonophoresis for this problem.

Should you be the victim of the Vulcan nerve pinch or simply a neck pain sufferer from trigger points of the upper trapezius muscle, ask a Physical Therapist to apply either or both of these treatment techniques. Experience the safe and effective relief of painful symptoms without adverse effects that phonophoresis and/or pressure release have to offer.

MORE Physical Therapy provides services for Physical Therapy in San Jose, Los Gatos, Foster City and Burlingame.

Reference: Javad Sarrafzadeh, PhD, PT, et al. The Effects of Pressure Release, Phonophoresis of Hydrocortisone, and Ultrasound on Upper Trapezius Latent Myofascial Trigger Point. In Archives of Physical Medicine and Rehabilitation. January 2012. Vol. 93. No. 1. Pp. 72-77.