

Dry needle therapy

Dry needle therapy, or dry needling, is a technique used to remove myofascial trigger points (TrP, trigger point) in the muscles. By inserting the needle into the trigger point, it gets mechanically damaged, causing metabolites to spill out into the surrounding area and the TrP to disappear (the exact mechanism is not known for sure, but this seems the most likely possibility).

History and development

The first mentions on dry needling are already known from the 1930s and 1940s, when local injections of anaesthetics were used to treat e.g. chronic pain. The earlier work was followed by Travell, who also concluded that the most effective of the injection therapies was the application of 0.5% procaine. Later it was shown that the mere insertion of a needle without injecting drugs had a similar effect. Lewit observed that, independently of the use of anaesthetic, he achieved a similar result; moreover, he pointed out the dependence of the effect on the accuracy of the injection into the most sensitive site. Thus, the removal of the TrP occurred only by mechanical damage, not by the effect of the anaesthetic. Later, Baldry warned of the risk of pneumothorax when introducing the needle deeper into the muscle in the chest regions and popularized the method of injecting the needle only into a site more superficial to the TrP.

Methods of application

Several physicians have influenced the historical development of this technique. Each of them contributed their experience and opinions, resulting in a wide variation of applications. This review includes techniques using acupuncture needles that are most widely used today.

The basic division is according to the position of the needle relative to the targeted TrP. It is further divided according to the technique of insertion, or the way the needle "moves" in the tissue.

- **Superficial Dry Needling (SDN)** – the needle tip does not reach the TrP during application.
 - **application according to Baldry:** the acupuncture needle is usually 5-10mm deep above the TrP site and is left for 30s. Especially the time values are highly individual.
- **Deep Dry Needling (DDN)** – the needle is injected directly into the TrP
 - **Hong's Fast in / Fast out technique:** originally classified as injectable, but with the use of an acupuncture needle, it is popular for DDN. Repeated insertion of the needle into the TrP induces local twitch response (LTR) and their gradual disappearance.
 - **method according to Chow:** a version of Hong's Fast in / Fast out technique, is characterized by the rotation of the needle during insertion and withdrawal.
 - **Gunn's application:** referred to by him as intramuscular stimulation, where slow insertion of the needle leads to LTR and relaxation of the muscle bundle or may lead to spasm and "retention" of the needle. In this case, the needle is left in place for up to 20 minutes (or longer) or slow twisting of the needle later leads to relaxation of the muscle.

Principles of application

During a therapy, several principles must be followed in terms of iatrogenic damage and effectiveness of therapy. Since dry needling (DN) is classified as an invasive method, its use should be well considered. Preferably, other non-invasive methods should be used and only in case of their failure should DN be resorted to. Sterility and hygiene must also be strictly observed during therapy to prevent the introduction of infection. Caution should be exercised with regard to other anatomical structures in the area treated primarily by the DDN technique, especially blood vessels, nerves and the thorax. The ability to accurately locate TrP by palpation in the stiff muscle bundle (taut band) is important; only by precise application will the desired result be achieved. The contact of the needle with the TrP induces the pain in question and also the LTR, which gives us an indication of the accuracy of the insertion. If the LTR is not induced, the TrP may not be relieved and disappear. As one of the negative effects, temporary local soreness or irritation may occur due to needle penetration through the tissues.

Efficiency

According to some published studies^{[1] [2] [3] [4]}, the efficacy may be high and comparable to injection of anaesthetics into the TrP site.

However, according to a meta-analysis on low back pain therapy that combines dry needling with acupuncture, most published studies are of low methodological quality. The clinical effect can be expected to be rather small, but it may be an appropriate complement to existing therapies. FURLAN, AD – VAN TULDER, MW – CHERKIN, DC. , et al. Acupuncture and dry-needling for low back pain. *Cochrane Database of Systematic Reviews* [online]. 2005, y. 1, p. CD001351, Available from <<http://cochranelibrary-wiley.com/doi/10.1002/14651858.CD001351.pub2/abstract>>. ISSN 1469-493X. </ref>

However, Lewit emphasizes on the proportionality of efficacy with the accuracy of application to the parts of the TrP eliciting LTR. Deep dry needling shows higher efficacy than superficial dry needling, yet the use of SDN is reasonable in high-risk areas.

Notice

According to the current Czech legislation, only doctors and not physiotherapists can use the dry needling technique.

Links

External links

- The Dry Needling Institute (<http://www.thedryneedlinginstitute.net/>)

Reference

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Used Literature

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