JOURNAL OF MANUAL & MANIPULATIVE THERAPY
2019, VOL. 27, NO. 3, 125–127
https://doi.org/10.1080/10669817.2019.1620049

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EDITORIAL

Needling: is there a point?

The popularity of dry needling (DN) continues to expand throughout the world. A growing number of jurisdictions are approving DN as within the scope of practice of physical therapists, chiropractors, acupuncturists, myotherapists (Australia), and more recently, occupational therapists and athletic trainers. Several United States entry-level university physical therapy programs are offering introductory DN courses, and most professional sports teams in the US employ physical therapists and athletic trainers who use DN in the care of their athletes. Even some emergency departments of hospitals use DN, among other alternatives, to reduce the number of opioid prescriptions for musculoskeletal pain [1].

While most commonly DN is directed at trigger points [2], its contemporary use also targets tendons [3,4], entheses [5], periosteum [6], scar tissue [7], and fascia [8] to reduce local and referred pain, lessen spasticity [9,10], eliminate neural entrapments [11], increase range of motion [12], or normalize muscle activation patterns [13]. DN is a safe anatomy-driven procedure [14], although there are inherent risks when safety precautions are not taken into account [15–18]. From 2013 to 2017, the database of CNA (the underwriting company for the APTA-endorsed physical therapy professional liability insurance plan) showed a total of 34 claims in 19 different states arising from DN practice. During that time period, US-based physical therapists may have performed well over 125 million DN treatments, assuming that about 25,000 physical therapists performed DN on average of 5 times per workday during 40 weeks in each given year.

From a research perspective, many questions remain.

- Is DN more effective than other treatment options? Does DN induce clinically meaningful changes [19–21]?
- Which method of DN is preferred, if any [22,23]?
- Is it necessary to elicit local twitch responses [24–27]?
- What constitutes safe DN practice [14,28–31]?
- Which patient populations may benefit the most from DN? Is DN contraindicated for patients with certain medical diagnoses? What is the best dosage of DN for various conditions [32]?

This special issue addresses several of these questions. Two randomized clinical trials (RCT) are included comparing DN to other interventions. Differing approaches to DN are used clinically, and this is reflected in the RCTs presented here [19,21]. One variation in approach to DN relates to the depth of needle penetration. This issue contains a systematic review with meta-analysis evaluating the effects of deep versus superficial needling [22]. Safety concerns are presented through a clinical commentary on patient screening [32], a descriptive study to examine safety factors related to patient position during DN [28], and a case study involving an adverse event following filiform needle use [33].

The first RCT examined people with low back pain and used DN applied segmentally to the paraspinal muscles as well as to innervation fields of peripheral nerves [19]. This intervention was compared to non-thrust manipulation under the premise that both interventions have mechanical and physiological effects, and some of the mechanisms resulting in pain relief may be shared between the techniques. The authors found no difference in outcomes between treatment groups, although they did find within-group improvements resulting from both interventions. In the second RCT, authors compared DN of myofascial trigger points in the upper trapezius to trigger point compression [21]. The authors concluded that both interventions resulted in improvements in pain and disability for up to three months following intervention. Interestingly, while both RCTs found within group improvements, they found no significant difference between DN and the interventions to which they compared (Griswold 2019; Ziaeifar 2019). The authors discuss clinical implications for their findings.

The systematic review and meta-analysis conducted by Griswold and colleagues were done to evaluate the effects of needle depth during treatment of patients with spinal pain [22]. Studies included in this review used superficial or deep needling performed as DN or acupuncture. Their findings favored deep needling for pain reduction, while differences were not found for disability measures. The authors discuss change scores and present results of a subanalysis on local versus distant needling.

The clinical commentary on patient screening guides clinicians to be mindful of medical conditions with which patients present, and associated risk factors that may influence decisions about the use of DN [32]. Specifically, the authors discuss conditions commonly mistaken for musculoskeletal conditions using a system-specific approach to present clinical considerations regarding technique and dosage of DN. In addition to screening patients for safety, choice of approach to DN may also influence patient safety. This issue also contains

an observational study examining patient positioning as a factor in determining the size of the 'safe needle zone' to avoid neurovascular structures when needling the iliacus muscle [28]. In the event when adverse events do occur, case studies can be a learning opportunity for readers to prevent similar future occurrences. The case presented in this special issue involves a patient who was seen in physical therapy after surgical removal of broken needles during acupuncture treatment. The author proposes considerations for prevention of such events [33].

In spite of the growing popularity of DN, not all physical therapists agree that DN or even the trigger point concept should be part of the scope of physical therapy [34]. According to Nada, 'trigger point dry needling is a money grabbing marketing ploy hiding behind a veil of tooth-fairy and pseudoscience. No matter how well presented, this takes the profession further away from our roots and closer to fringe CAM (complementary and alternative medicine) professions' [35]. Others opined that 'DN is an utter fool's errand wrought with placebo ... induced by maximal ritual effect, novel and exciting stimulus as well as an injection of hope for those desperate enough to allow someone to stab them with a needle' [36]. While it is conceivable that the act of DN offered within a therapeutic context may be sufficient to facilitate a positive response by evoking brain activation in reward-related brain areas [37], these characterizations do not seem to match the current state of affairs.

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