

Response Letter to Published Article: Ir Med J; February 2022; Vol 115; No. 2; P546

"Acupuncture-D": Bilateral Pneumothoraces Following Dry Needling by Dalton et al

J. McEvoy - United Physiotherapy Clinic, Limerick, Ireland.

Dear Sir,

The recent article by Dalton et al. on bilateral pneumothoraces following dry needling (DN) is an important reminder of a risk of iatrogenic pneumothorax. The authors should be commended for publishing this case study. Despite the serious nature of pneumothorax, especially bilateral, it is good to know the patient recovered with expert medical treatment.

Pneumothorax is a recognised adverse event (AE) in needling therapies. The vast majority of DN treatments are not associated with pneumothorax occurrence, and it is considered a very rare event. Several case studies on DN induced pneumothorax have appeared in the literature. The increased use of needling therapies may lead to more identified cases.

Adverse event studies are essential for ascertaining risk. The first AE study on DN was published in 2014 in Ireland by Brady et al¹. This prospective survey reported on 7,629 treatments given by 39 Chartered Physiotherapists. There was no significant AE and no pneumothorax. In the second study, Boyce et al surveyed 20,464 DN treatments by 420 US physiotherapists². In this larger sample size, no pneumothorax was noted. Therefore, the risk is lower than 1/20,464 (0.0048%) or "very rare" (WHO). However, the exact risk rate is unknown, and larger trials are required.

Dalton et al claimed there were two pneumothoraces in 20,464 DN treatments in the Boyce et al study². This is not correct. Boyce et al did not report any pneumothorax in the 20,464 treatments (refer to table 3, page 108)². Boyce was referring to a separate acupuncture study by Witt et al, where two pneumothoraces were reported in 2.3 million treatments⁴.

Despite differences between DN and acupuncture, studies on acupuncture induced pneumothorax are helpful in estimating risk. As an example of studies on European medical doctors using acupuncture, the risk of pneumothorax has been estimated at 1/69,000³ to 1/1.1 million treatments⁴ or "very rare". It is possible DN related pneumothorax may lie within this risk range. But again, the exact risk rate is not known.

Iatrogenic needling induced pneumothorax is preventable by safe needling technique. For accessible muscles over the thorax, a preferred pincer grip is employed so that the needling direction is in the plane parallel and not perpendicular to the ribs. All three parts of the trapezius can be treated safely with a pincer grip.

In the original article, we have no description of the clinician's professional background or training. The technique described states that multiple needles of 40mm in length were inserted over the upper and lower trapezius. If directed into the trapezius muscle indiscriminately towards the ribs, this gives rise to a significant risk of penetrating the pleura, as happened in this case. Again, a pincer grip technique would have negated this risk.

The Irish Society of Chartered Physiotherapists published Guidelines for Dry Needling Practice in 2012 for safe practice. Good safety standards are also echoed in a leading trigger point dry needling textbook. These publications remain a powerful resource for clinicians practising DN and negating the risk of needling-related pneumothorax.

Sincerely,

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References:

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2. Boyce D, Wempe H, Campbell C, Fuehne S, Zylstra E, Smith G, et al. Adverse Events Associated with Therapeutic Dry Needling. *Int J Sports Phys Ther.* 2020;15(1):103-13.
3. Umlauf R. Analysis of the main results of the activity of the acupuncture department of faculty hospital. *Acupunct Med.* 1988;5:16-8.
4. Witt CM, Pach D, Brinkhaus B, Wruck K, Tag B, Mank S, et al. Safety of acupuncture: results of a prospective observational study with 229,230 patients and introduction of a medical information and consent form. *Forsch Komplementmed.* 2009;16(2):91-7.