Turk J Phys Med Rehab 2023;69(2):259-260
DOI: 10.5606/tftrd.2023.12934
Available online at www.turkishjournalpmr.com

Letter to the Editor

Reply on the article: "Dry-needling with blinded technique in pectoralis minor syndrome"

İlknur Aktaş, Feyza Ünlü Özkan

Department of Physical Medicine and Rehabilitation, University of Health Sciences, Fatih Sultan Mehmet Training and Research Hospital, Istanbul, Türkiye

Received: April 19, 2023 **Accepted:** April 24, 2023 **Published online:** May 06, 2023

We carefully read the comments of Dede et al.[1] regarding our review with great interest.[2] We are not in agreement with the authors' views encouraging blind injections to pectoralis minor (PM) and scalene muscles overlying the thorax and major neurovascular structures, respectively, when the discussions on blind injections being ethical are continuing.[3]

The PM muscle is located under the pectoralis major muscle, arises from the anterior surface of the third, fourth, and fifth ribs, and attaches to the coracoid process of the scapula, where it forms a bridge over the brachial plexus, subclavian artery, and subclavian vein.[4] The PM syndrome may appear due to posture disorders, occupations, and sportive activities requiring repetitive elevation of arms and due to the spasm or spasticity of the PM muscle.[5,6] Ultrasound-guided PM muscle blocks are employed both to confirm a diagnosis[4] suspected on clinical findings and to apply therapeutic trigger point injections in myofascial pain syndrome. Ultrasound-guided injections are reliable, practical, and inexpensive, allowing visualization of neurovascular structures to avoid intraneural and intravascular injections and pneumothorax.

Authors have mentioned the blind technique of dry needling treatment with the "3P" rule: position, palpation, and penetration angle. It is an effective technique that we use in daily practice in the management of various myofascial pain syndromes. The pectoralis major muscle is just one example that we frequently needle with the 3P rule. However, when the issue is needling the PM muscle with the 3P rule, the subject is to come up against a fourth "P": penetration into unwanted structures, which are the lungs, nerves, or vessels. Penetration into branches of the brachial plexus, carotid artery, jugular vein, and phrenic nerve[7,8] are the probable penetration targets during blind dry needling of the anterior scalene muscles with the 3P rule.

Another concern about blind PM injections is the variant anatomy of the PM muscle. There are many reported anatomical variations.[9,10] Deviations from the general pattern of origin and insertion of the PM are relatively common; as many as 23% of people demonstrate some variation.[9] In addition, PM muscle thickness may vary depending on the underlying pathology; for example, in spasticity, the thickness of the muscle may decrease below 0.5 cm (Figure 1).

Dry needling is a skilled intervention as the authors mentioned in their letter, which we widely use in the management of various pain syndromes in our daily practice. Vast majority of dry needling is done with the blind technique, but particularly for the PM and scalene muscles, we strongly recommend ultrasound guidance for an effective and safe injection and to avoid pneumothorax and injury to neurovascular structures. Since patient safety is of paramount importance, we are against

Corresponding author: İlknur Aktaş, MD. SBÜ, Fatih Sultan Mehmet Eğitim ve Araştırma Hastanesi, Fiziksel Tıp ve Rehabilitasyon Kliniği, 34752 Ataşehir, İstanbul, Türkiye.
E-mail: iaktas@hotmail.com

Cite this article as:
Aktaş İ, Ünlü Özkan F. Reply on the article: "Dry-needling with blinded technique in pectoralis minor syndrome". Turk J Phys Med Rehab 2023;69(2):259-260. doi: 10.5606/tftrd.2023.12934.

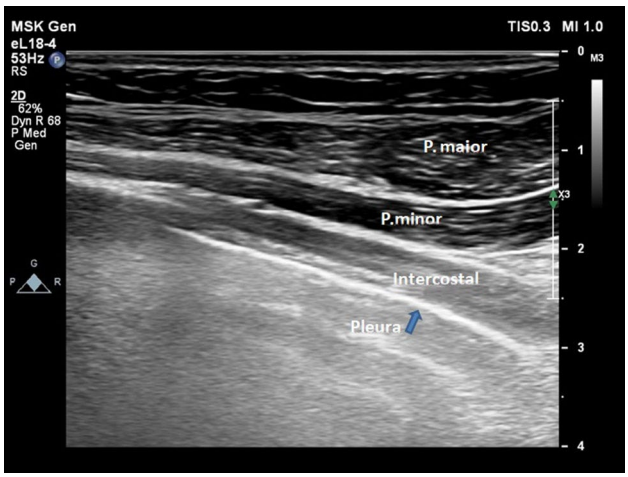

Figure 1. Transverse plane ultrasound image of the pectoral muscles in a patient with PM syndrome due to spasticity. Pectoralis minor muscle thickness and its close proximity to pleura is observed.

P. Major: Pektoralis major muscle; P. Minor: Pektoralis minor muscle; Intercostal: Intercostal muscle.

blinded PM injections and always keep in mind the motto "primum non nocere."

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions: Idea, moderation, references, ingredients, data collection and/or processing, analysis and/or interpretation: İ.A.; Design: F.Ü.Ö.; Writing by : İ.A., F.Ü.Ö.; Critical review: F.Ü.Ö.

Conflict of Interest: The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding: The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. Dede BT, Temel MH, Bağcıer F. Dry-needling with blinded technique in pectoralis minor syndrome. Turk J Phys Med Rehabil 2023;69:257-8.
2. Aktaş İ, Ünlü Özkan F. Pectoralis minor syndrome. Turk J Phys Med Rehabil 2022;68:447-55. doi: 10.5606/tftrd.2023.12037.
3. LaBan MM, Weir SK. Özcakar L, Önat SS, Gürcay E, Kara M. Are Blind Injections Ethical or Historical? Think Twice with Ultrasound. Am J Phys Med Rehabil 2016;95:158-60. doi: 10.1097/PHM.0000000000000579.
4. Sanders RJ, Rao NM. The forgotten pectoralis minor syndrome: 100 operations for pectoralis minor syndrome alone or accompanied by neurogenic thoracic outlet syndrome. Ann Vasc Surg 2010;24:701-8. doi: 10.1016/j.avsg.2010.02.022.
5. Aktaş İ, Kaya E, Akpınar P, Ünlü Özkan F, Vural A,Akgün K. Vascular pectoralis minor syndrome as an overlooked condition: A case report. Turk J Phys Med Rehabil 2021;67:538-41. doi: 10.5606/tftrd.2021.8105.
6. Aktas I, Kaya E, Akpinar P, Atici A, Unlu Ozkan F, Palamar D, et al. Spasticity-induced Pectoralis minor syndrome: a case-report. Top Stroke Rehabil 2020;27:316-9. doi: 10.1080/10749357.2019.1691807.
7. Joeng ES, Jeong YC, Park BJ, Kang S, Yang SN, Yoon JS. Sonoanatomical Change of Phrenic Nerve According to Posture During Ultrasound-Guided Stellate Ganglion Block. Ann Rehabil Med 2016;40:244-51. doi: 10.5535/arm.2016.40.2.244.
8. Doyle MP, McCarty JP, Lazzara AA. Case Study of Phrenic Nerve Paralysis: "I Can't Breathe!". J Emerg Med 2020;58:e237-e241. doi: 10.1016/j.jemermed.2020.03.023.
9. Lee KW, Choi YJ, Lee HJ, Gil YC, Kim HJ, Tansatit T, Hu KS. Classification of unusual insertion of the pectoralis minor muscle. Surg Radiol Anat 2018;40:1357-61. doi: 10.1007/s00276-018-2107-0.
10. Burley HEK, Haładaj R, Olewnik Ł, Georgiev GP, Iwanaga J, Tubbs RS. The clinical anatomy of variations of the pectoralis minor. Surg Radiol Anat 2021;43:645-651. doi: 10.1007/s00276-021-02703-y.