Myofascial pain syndrome (MPS) is a clinically common observation with characteristics such as localized muscle tenderness, a palpable intramuscular taut band, and muscle spasm following trigger point injection [1]. It is a musculoskeletal disorder with sensory, motor, and autonomic symptoms and is commonly encountered in clinical settings [2]. Myofascial trigger points (MTrPs) are the primary cause of MPS, accounting for approximately 54% of chronic pain in the head and neck [3]. A recent study also found that the upper trapezius muscles were the primary cause of MPS in patients with chronic non-specific neck pain [4].

The exact pathophysiology of MTrPs and MPS remains unknown. However, the proposed mechanisms have been reported in the literature. MPS is thought to be a complex form of neuromuscular dysfunction consisting of motor and sensory abnormalities involving peripheral and central nervous systems [5,6]. The primary mechanism is known to involve an abnormal increase in acetylcholine, triggering a continuous release and uptake of calcium ions, leading to muscle ischemia resulting from a sustained shortening of sarcomeres and release of sensitizing substances [7,8]. Excessive release of acetylcholine may cause the development of a tight band that results in persistent muscle contraction [9].

There are various therapeutic approaches to treat MPS, including invasive techniques (such as dry needling, trigger point injection) and non-invasive techniques (such as drug therapy and electrical and exercise treatments). Electrical treatments include interference current therapy, ultrasound, and transcutaneous electrical nerve stimulation, while exercise treatments include stretching, massage, and taping [10-13].

As a non-invasive and safe modality, the use of extracorporeal shock wave therapy (ESWT) has expanded to the treatment of MPS [12,14-17]. Some evidence-based medical reviews have also explored the effectiveness of ESWT for MPS of the trapezius muscle [18-20]. ESWT improves capillary blood circulation in ischemic zones and alters pain signaling in ischemic tissues caused by calcium influx in a study by De Sanctis et al. [21]. A previous study demonstrated that ESWT might interrupt the cascade of referred pain by inhibiting peripheral muscle nociceptors and reducing the levels of substance P [15].

However, thus far, not a single treatment modality has been proven to be superior to treat MPS. A systematic review and meta-analysis suggested ESWT to be helpful for pain in patients with MPS of the trapezius and could
serve as an adjunct therapeutic method to treatments such as dry needling, trigger point injection, and laser therapy [19]. In light of these observations, a study on the impact of the combined effect of ESWT and integrated neuromuscular inhibition on MPS of the upper trapezius published in this issue of the *Annals of Rehabilitation Medicine* can be considered highly remarkable [22]. The authors investigated the combined effect of ESWT and integrated neuromuscular inhibition on MPS of the upper trapezius in 60 subjects aged 18–24 years by randomized controlled trials. The results revealed that the combined treatment of ESWT and integrated neuromuscular inhibition for treating MTrPs in the upper trapezius is more effective than using only one of them considering the clinical, functional, and neurophysiological aspects.

ESWT should be recommended as a standard therapy in clinical settings for managing MPS of the upper trapezius. Considering various mechanisms of MPS, combined therapy with ESWT and other interventions would be a reliable treatment method for MPS of the upper trapezius.

**CONFLICT OF INTEREST**

No potential conflict of interest relevant to this article was reported.

**AUTHOR CONTRIBUTION**

Conceptualization: Lee SU. Methodology: Lee SU, Lee CH. Writing - original draft: Lee CH. Writing - review and editing: Lee SU. Approval of final manuscript: all authors.

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