



Comment on “Piriformis syndrome: pain response outcomes following CT-guided injection and incremental value of botulinum toxin injection” by Yan et al.

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Dear Editor;

We read the recent original article by Yan et al.¹ entitled “Piriformis syndrome: pain response outcomes following CT-guided injection and incremental value of botulinum toxin injection” with great interest. We would like to share some thoughts on the study method and interpretation by Yan et al.¹

Patients who were diagnosed with piriformis syndrome (PS) based on clinical findings and/or magnetic resonance neurography (MRN) findings were included in the current study. To diagnose PS, symptoms, clinical findings (including PS-specific tests such as Frieberg test; flexion, adduction, and internal rotation maneuver; Pace sign; Beatty maneuver) and radiological findings should be evaluated together.² If PS is suspected, the diagnosis should be confirmed with intramuscular local anesthetic (LA) injection.³ Anatomic variations and muscle changes were mentioned in the etiopathogenesis of PS, but PS is mostly considered to be of myofascial origin.² Trigger points and spasm of piriformis muscle cause buttock pain and can also irritate the nearby sciatic nerve and cause pain, numbness, and tingling along the back of the leg. As in other myofascial pain syndromes, dramatic and sudden relief in pain after intramuscular injection of LA confirms the diagnosis of PS.³

Additionally, in this study, it was found that the patients in the Botox group had more pain relief 48 hours after the injection than the patients in the non-Botox group. Due to the transition time in the neuromuscular junction, the neuromuscular blockade of botulinum toxin starts a few days after injection and reaches its maximum after a few weeks.⁴ The onset of muscle weakening does not occur in the first 48 hours. In contrast, the inactivation of trigger points with LA or other solutions including botulinum neurotoxin occurs in a short time following the injection. The effect achieved at 48 hours in this study may be the result of a myofascial block rather than the neuromuscular blockade effect.

Another concern is that computerized tomography (CT) was preferred as an imaging modality in the current study to guide the piriformis muscle injections. However, during CT-guided injection, the patient and physician are exposed to ionizing radiation and this method cannot be applied to patients with contraindications to radiation exposure and contrast agents such as pregnancy and allergy to contrast media.⁵ Piriformis muscle injection can be performed in a simpler, more accessible, economical, and effective way with ultrasound (US) guidance (Supplementary video). CT and MR verification studies have shown that it is an effective and reliable method.^{5,6}

In conclusion, PS diagnosis should be confirmed with intramuscular LA injection, and US guidance should be the preferred imaging technique during piriformis muscle injections.

Conflict of interest disclosure

The authors declared no conflicts of interest.

Supplementary video

Ultrasound-guided intramuscular local anesthetic injection to the piriformis muscle. The progress of the needle during injection, twitching response, and spreading of local anesthetic can be observed.

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