

CASE REPORT

5-in -1 Block for Chronic Myofascial Upper Back and Neck Pain: A Prospective Patients Series

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Gayathri Subhash Banasode, Nivedita Page, Kashinath Bangar et. al, 5-in -1 Block for Chronic Myofascial Upper Back and Neck Pain: A Prospective Patients Series. Ind J Anesth Analg. 2025; 12(1): 52-56.

ABSTRACT

Chronic myofascial pain of cervical spine and shoulder is often related to faulty posture. Extended period of screen usage, faulty posture and sedentary lifestyle exacerbate tightness and weakness of back and core muscles. Excessive strain on the surrounding muscles and cervical spine leads to inter vertebral strain and spinal misalignment, and spine shaped like a “question mark” exaggeration of lumbar spine lordosis and excessive kyphosis of the thoracic spine. A bad posture can cause the musculature of the neck and upper back to strain excessively, which can irritate the spinal accessory nerve (SAN) and dorsal scapular nerve (DSN). A 5-in-1 trigger point and hydro-dissection technique has been described by Tang *et al* that specifically target trapezius, rhomboids, levator scapulae, and hydro dissecting the DSN and SAN to provide pain relief. We report ten patients of chronic myofascial upper back and neck pain managed by 5-in 1 block.

Conclusions: 5-in 1 block is a good treatment option for patients suffering from chronic upper back and, neck pain and multidisciplinary approaches are essential.

KEYWORDS

• Numeric rating scale (NRS) • Myofascial pain • Trigger points

INTRODUCTION

The phrase “chronic primary musculoskeletal (MSK) pain” refers to persistent pain in the tendons, joints, or bones that is associated with a significant functional impairment. The pain distribution commonly involved in upper

back pain, tightness in the trapezius muscle radiating into the medial border of the scapula and/or ipsilateral posterior shoulder. scapulae and Rhomboid muscles. Evidence indicate an annual prevalence of neck pain averages between 30% and 50%.¹ This entity is not only

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➤ **Received:** 28-11-2024 ➤ **Revised:** 20-12-2024 ➤ **Accepted:** 28-12-2024



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a common cause of disability but also causes a significant social, economic, and health impact.^{2,3,4}

Tender points are localised, isolated, hyperirritable regions that serve as trigger points (TrPs) inside a taut band of skeletal muscle. Stress on muscle fibres can result from acute trauma or recurrent microtrauma, which can then cause TrPs to form. Palpation of the TrP elicits pain directly over the affected area or causes radiation of pain toward a reference zone and a local twitch response.⁽⁵⁾

A bad posture can cause the musculature of the neck and upper back to strain excessively, which can irritate the spinal accessory nerve (SAN) and dorsal scapular nerve (DSN). A 5-in-1 trigger point technique has been described by Tang *et al.*⁽⁶⁾ that specifically target trapezius, rhomboids, levator scapulae, and hydro dissecting the DSN and SAN to provide further pain relief from possible nerve entrapments. Effective management of Myofascial pain Syndrome (MPS) typically involves a multimodal approach, combining conservative therapies with interventional procedures.

In this Patients series, we describe our experience of 5 in 1 block for chronic myofascial upper back and neck pain management in ten patients.

CASE SERIES

In this study, we discussed how 5 in 1 block was successfully applied in the management for refractory upper back and neck pain.

Ten patients [Table 1] suffering from chronic myofascial upper back and neck pain were identified as suitable candidates for 5 in 1 block.

Table 1: Pain intensity at baseline & after procedure - NRS

Sl. No	Age (in Yrs)	NRS Baseline (0 to 10)	NRS After Procedure (0 to 10)
Patient-1	32	8/10	1/10
Patient-2	38	9/10	1/10
Patient-3	31	8/10	2/10
Patient-4	34	8/10	1/10
Patient-5	37	9/10	1/10
Patient-6	38	9/10	2/10

Sl. No	Age (in Yrs)	NRS Baseline (0 to 10)	NRS After Procedure (0 to 10)
Patient-7	28	9/10	1/10
Patient-8	29	9/10	2/10
Patient-9	36	9/10	2/10
Patient-10	33	9/10	2/10

Patients No. 1, 3, 4: Male patients, in third decade of age, works at a desk and reports having tightness in their right upper back and neck that has been there for three months. No comorbidities. With NRS of 8/10. Medical management with Pregabalin and Duloxetine. Physiotherapy done. Dry needling⁽⁷⁾- 6 sessions done. NRS of 7/10.

Patients No. 2, 5, 6, 9: Male patients fourth decade of age has been complaining of right neck and upper back pain as well as tightness for 3 months. No systemic illness. History of extended use of screens. With NRS of 9/10. Medical management with Pregabalin and Duloxetine. Physiotherapy done. Dry needling - 6 sessions done. NRS of 7/10.

Patients No. 7, 8, 10: Female patients in their fourth decade of age, complains of neck and, upper back pain, upper back tightness, with limited range of movement of neck for 6 months. With NRS of 9/10. No systemic illness. Medical management with Pregabalin and Duloxetine. This had been unresponsive to pharmacological therapy, physiotherapy. Dry needling 6 sessions performed to upper back muscles with evident of local twitch response. There was improvement in neck movement and relatively decrease in pain. NRS of 8/10.

Pharmacotherapy management were only partially effective - Patient reported NRS about 5/10 to 6/10.

None of the ten patients said that medication or physical therapy helped with their symptoms. Patients were given option of treatment with 5-in-1 block in single injection were explained about outcome and complications. All patients were ready to undergo intervention. Preoperative basic blood investigations hemogram, coagulation profile done.

Informed, written, valid consent was obtained from patients.

On arrival in the Pain Procedure room, ASA standard multipara monitors attached, A 20 G cannula was secured in the upper limb, and antibiotics stat dose given. ASA resuscitative measures kept ready.

The patient prone position with a slight head in flexion. Under all aseptic precautions, a high frequency (15-20 MHz) linear ultrasound probe positioned, at the level of the scapular spine, on the affected side in a medial to lateral orientation. In this plane, the trapezius muscle can be seen superficially. Between the trapezius muscle and rhomboid minor, the spinal accessory nerve can be visualized in the fascial plane. Deep to the rhomboid muscle, the serratus posterior superior and other paraspinous muscles can be visualized with the pleura and lungs deep to these structures., the dorsal scapular artery (DSA) is identified using the color Doppler on the ultrasound. Once the DSA is identified, an in-plane injection can be performed. Local anaesthesia infiltration of the skin with a 26 gauge 1.5 inch needle with 1% lidocaine. A 22 gauge 3.5 inch spinal needle was inserted in a medial to lateral direction.

- a. First the trapezius muscles was infiltrated, with 1% lignocaine 3cc followed by
- b. Hydrodissection of the spinal accessory nerve, with inj. 1% lignocaine and 10mgs of Triamcinolone steroid.
- c. Then the needle was advanced to the rhomboid minor muscle and infiltrated, with 1%inj. lignocaine 3cc.
- d. The dorsal scapular artery identified and the adjacent DSN was then hydrodissected between the serratus posterior, with 1% lignocaine and 10mgs of Triamcinolone steroid.
- e. Levator scapulae infiltrated, with 1% lignocaine 3cc.

For an hour, patients were kept in the supine position and watched for signs of respiratory depression and local anaesthetic toxicity. None of patient suffered from motor weakness or lateral scapular winging. NRS was reduced to 2 or less than 2 out of 10, in all these patients. No patients suffered from complications. All the patients were discharged on same day of procedure.

Physiotherapy for ergonomic adjustments, and stretching and strengthening exercises to improve muscle functions started in all three patients. The patient's response were followed up at 2 weeks and monthly thereafter. At 2 weeks, NRS reported was 2/10 which came down to 0/10 on subsequent followups. At the time of submission of this manuscript, the patients had completed 2 monthly followups with no reported complication attributable

to the procedure. Consent of the patients for publication of this Patients series report was obtained before the preparation of this manuscript.

Follow-up at 1 week, 4th week and 2 months following procedure, the patients reported a pain score of 0 out of 10.

DISCUSSION

A bad posture can cause the musculature of the neck and upper back to strain excessively, which can irritate the spinal accessory nerve (SAN) and dorsal scapular nerve (DSN). Clinical Presentation: Patients with MPS commonly have deep, throbbing pain that may be far from the site of injury, as well as localised muscular pain. observable, tense bands.^(8,9) The trigger points are tiny, hard nodules that are sensed within the muscle. Applying pressure to a trigger point can send pain radiating to other areas. Mobility may be restricted by TrP-related muscle weakness or tightness. In addition, patients may report emotional issues, sleep disturbances, or exhaustion, which makes managing MPS a challenging.

Effective management of MPS typically involves a multimodal approach, combining conservative therapies with interventional procedures. Treatment aims to alleviate pain, release trigger points, and restore normal muscle function. Ergonomic Adjustments: Correcting poor posture and minimizing repetitive strain can prevent the recurrence of Myofascial Trigger Points (MTrPs). Cognitive-behavioural therapy (CBT) or counselling may help patients cope with chronic pain, especially when stress or mood disorders are contributing factors. When conservative treatments fail or provide inadequate relief, interventional pain procedures become essential in managing MPS. These interventions aim to deactivate trigger points, reduce pain, and improve function.

A 5-in-1 trigger point technique has been described by Tang *et al.* that specifically target trapezius, rhomboids, levator scapulae, and hydro dissecting the DSN and SAN to provide further pain relief from possible nerve entrapments.

D.J. Modi *et al*⁽¹⁰⁾. retrospective analysis of patients receiving the 5-in-1 trigger point injection and hydro-dissection technique for interscapular mid-thoracic myofascial

pain: demonstrated that the intervention significantly reduced the patient's pain. The 5-in-1 trigger point and hydro dissection approach is a secure and reliable method for treating pain associated with the medial scapula.

Following a 5-in-1 block, all three of our patients experienced sufficient pain relief, and they responded well to physical activity treatment.

When treating persistent upper back and neck pain, ultrasound guided 5-in-1 block is a safe and efficient intervention that offers satisfactory pain relief. Validating the results of this study will require larger investigations with randomised control groups.



Fig. 1: Transverse scanning at the level of the scapular spine

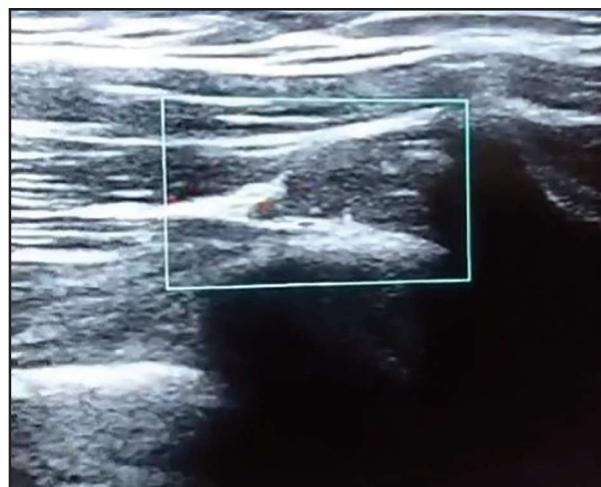


Fig. 2: Ultrasound image at the level of the scapular spine

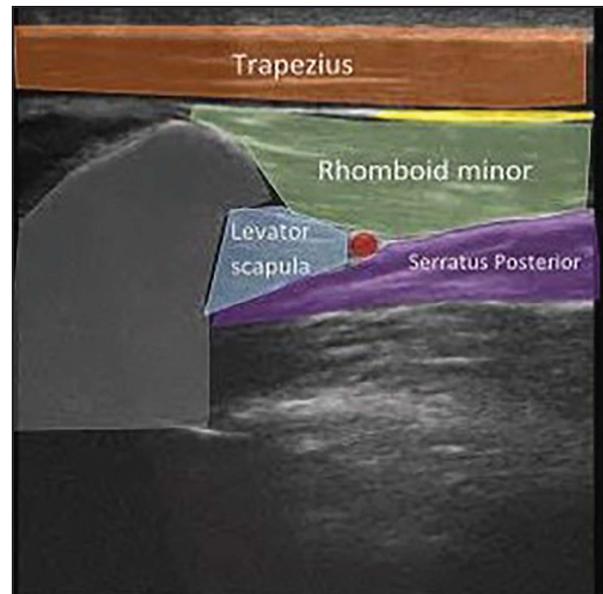


Fig. 3: Trigger point

CONCLUSION

A comprehensive approach to diagnosis and care is necessary for myofascial pain syndrome, as it is a complicated and multifaceted pain problem. With the help of these interventional treatments, patients may experience quick and long-lasting relief that restores function and enhances quality of life. Long-term success with chronic pain disorders necessitates a comprehensive strategy involving physical therapy, pharmaceutical treatment, ergonomic modifications, and psychological support.

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