Case Report

Ultrasound-Guided Diagnostic Nerve Block and Hydro Dissection for Dorsal Scapular Nerve Entrapment Syndrome

Priya Nair[1,2], Gautam Das[1], Shalina Chandran[1], Basavaraj Kanthi[1]

[1]Department of Pain Medicine, Daradia Pain Hospital, Kolkata, West Bengal, [2]Department of Anaesthesia and Pain Medicine, Manipal Hospital, Bengaluru, Karnataka, India

Abstract

Entrapment neuropathy of the dorsal scapular nerve is known to be one of the common causes of pain in the interscapular region. Patients with entrapment neuropathy can experience sharp, stabbing, and burning pain or an itching sensation at the neck, shoulder, and arm, as well as in the interscapular region. This nerve impingement or entrapment often leads to pain in the upper extremity and back. The signs and symptoms of dorsal scapular neuropathy bear a striking resemblance to several other diagnosis or findings in the cervicothoracic, scapular, and posterolateral arm areas; hence, diagnosing the condition can be difficult. Here, we present a case of a 29-year-old female patient who came to the outpatient clinic of Daradia Pain Hospital and was successfully managed with hydro dissection of dorsal scapular nerve.

Keywords: Dorsal scapular nerve, entrapment, hydro-dissection

Introduction

The dorsal scapular nerve arises from C5 within the posterior cervical triangle, proceeds deep to the prevertebral fascia, and pierces the middle scalene muscle to innervate the rhomboid muscles. It passes under the levator scapulae muscle and then becomes more superficial between the rhomboid major and minor muscles as it travels caudally along the medial border of the scapula.[1,2]

Entrapment neuropathy of the dorsal scapular nerve is known to be one of the common causes of pain in the interscapular region. Patients with entrapment neuropathy can experience sharp, stabbing, and burning pain,[3] or an itching sensation[4] at the neck, shoulder, and arm, as well as in the interscapular region. This nerve impingement or entrapment often leads to pain in the upper extremity and back. Patients typically experience sharp or aching pain along the medial border of their scapula that can radiate to the lateral aspect of their arm and forearm.[5] Motor weakness in shoulder abduction and winged scapula has also been described as symptoms. Due to a varied plethora of symptoms resembling a number of clinical conditions, diagnosis can be confusing.

Access this article online

Quick Response Code:

Website: www.jorapain.com

DOI: 10.4103/jrap.jrap_14_21

Case Report

A 29-year-old female patient came to the outpatient clinic of Daradia Pain Hospital with a complaint of left-sided upper back pain for the past 5 years. Her pain was gradual in onset and increased in severity for the past 2 years. Her pain was aggravated by lying on the left side and increased in severity with the day-to-day activities and relieved by rest. Pain was associated with tingling and electric shock-like sensation on the upper back (left side). No radiation of pain to neck or arm was noted. Numerical rating scale was documented as 8 at the time of review in outpatient department.

On physical examination, asymmetry of both the shoulders with left shoulder drooping and subtle lateral winging of scapula was present, flexion and lateral rotation to right were painful. Shrugging of shoulders was found to be normal.

Address for correspondence: Dr. Priya Nair, No. 3 II Cross Ganesha Block, RT Nagar, Bangalore - 560 032, Karnataka, India.
E-mail: priyanairace@gmail.com

Submitted: 19-Nov-2021 **Accepted:** 24-Dec-2021
Published: 08-Mar-2023

How to cite this article: Nair P, Das G, Chandran S, Kanthi B. Ultrasound-guided diagnostic nerve block and hydro dissection for dorsal scapular nerve entrapment syndrome. J Recent Adv Pain 2021;7:40-1.

Tenderness was present in left paramedian region along the medial border of scapula. Neurological examination was normal.

Based on the history and clinical findings, the provisional diagnosis of dorsal scapular nerve entrapment was made. To confirm the diagnosis, ultrasound-guided identification of the nerve followed by diagnostic block with local anaesthetic under real-time ultrasonography was carried out. The patient indicated pain relief of more than 80% after diagnostic block with 1% lignocaine within few minutes. Hence, the diagnosis of dorsal scapular nerve entrapment was confirmed. Simultaneously, hydro-dissection of the dorsal scapular nerve was done using 5% dextrose [Figure 1]. Her numerical rating scale postprocedure was 2–3.

The patient was discharged after 2 h of observation with advice to take tablet baclofen 5 mg twice daily for 3 days followed by 10 mg for the next 3 days followed by 10 mg thrice for a month. Duloxetine 20 mg Hs was advised for a month, tablet etoricoxib 10 mg was advised twice daily for 10 days. The patient was advised to review if pain recurs.

Discussion

The signs and symptoms of dorsal scapular neuropathy bear a striking resemblance to several other diagnosis or findings in the cervicothoracic, scapular, and posterolateral arm areas; hence, diagnosing the condition can be difficult. Pain in the interscapular region can have various etiologies including discogenic or facet joint disorders, myofascial pain syndrome, back strain, and entrapment neuropathy.[6] The onset of pain can appear abruptly or develop slowly over time. Pain on palpation of the thoracic spinous process,[7] thoracic facet, and costotransverse joints may also be present. Relative hypertrophy and spasm of the neck musculature have also been reported.[8] Hydrodissection of a nerve helps to improve its kinematic properties and relieve the entrapment.

Conclusion

Dorsal scapular nerve entrapment is to be considered in patients presenting with upper thoracic and interscapular pains. Prompt diagnosis and hydro dissection of dorsal scapular nerve are the key to successful management of entrapments.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that their name and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Figure 1: Ultrasound image showing muscles-trapezius, rhomboids, and scapula with dorsal scapular nerve

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Tubbs RS, Tyler-Kabara EC, Aikens AC, Martin JP, Weed LL, Salter EG, *et al.* Surgical anatomy of the dorsal scapular nerve. J Neurosurg 2005;102:910-1.
2. Kim YD, Yu JY, Shim J, Heo HJ, Kim H. Risk of Encountering Dorsal Scapular and Long Thoracic Nerves during Ultrasound-guided Interscalene Brachial Plexus Block with Nerve Stimulator. Korean J Pain 2016;29:179-84. doi: 10.3344/kjp.2016.29.3.179. Epub 2016 Jul 1. PMID: 27413483; PMCID: PMC4942646.
3. Sultan HE, Younis El-Tantawi GA. Role of dorsal scapular nerve entrapment in unilateral interscapular pain. Arch Phys Med Rehabil 2013;94:1118-25.
4. Srikumaran U, Wells JH, Freehill MT, Tan EW, Higgins LD, Warner JJ. Scapular winging: A great masquerader of shoulder disorders: AAOS exhibit selection. J Bone Joint Surg Am 2014;96:e122.
5. Nakano KK. The entrapment neuropathies. Muscle Nerve 1978;1:264-79.
6. Ballyns JJ, Shah JP, Hammond J, Gebreab T, Gerber LH, Sikdar S. Objective sonographic measures for characterizing myofascial trigger points associated with cervical pain. J Ultrasound Med 2011;30:1331-40.
7. Chen D, Gu Y, Lao J, Chen L. Dorsal scapular nerve compression. Atypical thoracic outlet syndrome. Chin Med J (Engl) 1995;108:582-5.
8. Wood VE, Marchinski L. Congenital anomalies of the shoulder. In: Rockwood CA, Matsen FA, editors. The Shoulder. Vol. 1. Philadelphia: WB Saunders; 1998. p. 99-163.