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Pei-Hsin Lee

Poi-Wei Lin

Lin-Fen Hsieh

Chang-Zern Hong

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Facet Injection to Control the Recurrent Myofascial Trigger Points : A Case Report

Pei-Hsin Lee, Poiwei Lin*, Lin-Fen Hsieh, Chang-Zern Hong**

Department of Physical Medicine and Rehabilitation, Shin Kong Wu Ho-Su Memorial Hospital
Taipei Medical College Affiliated Taipei Municipal Wan-Fang Hospital*
University of California Irvine, California, U.S.A.**

Recurrent myofascial trigger points (MTrPs) may be caused by or associated with chronic soft tissue lesion(s) which can not be easily identified. We hereby report a case of recurrent myofascial trigger points in the upper back muscles, which were successfully controlled after one treatment of cervical facet injection.

This patient was a 40-year-old man who had suffered from chronic left upper back pain and soreness with tingling sensation and back stiffness for six months. He had active MTrPs in the left levator scapulae, left rhomboid major and minor, left upper trapezius, and left serratus posterior superior muscles. Spurling sign was negative. Neurological examination was within normal limits. Electromyographic examination revealed evidence of chronic C6 and C7 radiculopathies in both sides. MRI of the cervical spine showed mild disc bulging at C5-6 and C6-7 levels. He was firstly treated conservatively with physical therapy including heat therapy and cervical traction. He also received acupuncture and lidocaine injection to the active MTrPs, which showed only temporary effect. Further examination revealed severe tenderness in the left C5-6 facet joint, which was correlated with finding of CT scan. MTrPs pain in the left upper back could be reproduced during compression of the facet joint. Therefore, injection with betamethasone 4 mg plus 1% lidocain 0.5 cc was performed to the left C5-6 facet. Immediately after injection, all the MTrPs became inactive (pain free) . In a follow-up examination 2 months later, no active MTrPs could be identified. No recurrence of symptoms was reported in a follow up phone call 15 months later. It is suggested that when a patient has recurrent MTrPs in the upper back, careful examination for facet joints to find possible association of facet lesion and MTrPs and to offer appropriate local injection may be very helpful to control the recurrent MTrPs. (J Rehab Med Assoc ROC 1998; 26(1): 41-45)

Key words: neck pain, facet joint, facet injection, myofascial trigger point

INTRODUCTION

Myofascial pain syndrome (MPS) is one of the common causes of upper back pain, and myofascial trigger point (MTrP) is characteristic of MPS[1]. MTrP is a hyperirritable spot in a taut band of skeletal muscle fibers. In patients with MPS involving the neck and upper back area, tension headache, tinnitus, wry neck and neck stiffness are common manifestations. The involved muscles may include temporalis, masseter,

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Address correspondence to: Dr. Chang-Zern Hong, Department of Physical Medicine and Rehabilitation, University of California Irvine, California, U.S.A.
Tel：0021-714-456-6672

sternocleido-mastoideus, trapezius, levator scapulae, splenius capitis, splenius cervicis, and scaleni [1]. The causes include habitual faulty posture, persistent muscle tension, emotional stress, and cervical degenerative joint disease or trauma [1,2]. The differential diagnosis should include local muscle lesion, cervical disc lesion, radiculopathy, and facet (zygapophysial) joint lesion.

Previous study indicated that trauma, inflammation or infection of the facet joint may cause pain in the head, neck and upper back [3]. Clinically, it is difficult to distinguish MPS and facet lesion involving the cervical spine. Buduk and Simons have indicated that facet lesion of C2-3 may cause pain similar to myofascial pain of semispinalis capitis or upper splenius cervicis and that the pain caused by C4-5 facet lesion is similar to that caused by MTrP of levator scapulae [3]. The reason is probably related to the innervation of these muscles [2]. To our knowledge, up to date, no English literature has reported MTrPs caused by facet lesion. In this case report, we presented a patient with chronic MPS of neck and upper back associated with cervical facet lesion who had been successfully treated with facet joint injection.

CASE REPORT

A 40-year-old man, an office worker, developed progressive pain, numbness and stiffness of the neck and upper back for 6 months with no history of acute trauma. When he was examined in our clinic, active MTrPs in the levator scapulae , rhomboid minor and major, serratus posterior superior, and upper trapezius muscles could be identified. Range of motion of the cervical spine was within normal limits. Spurling sign was negative. Neurological examination was also normal.

At first, he was treated conservatively with hydrocollator hot pack and transcutaneous electrical nerve stimulation with no remarkable effect. Electrodiagnostic test was performed and revealed evidence of chronic left C6 and C7 radiculopathies. MRI revealed mild disc bulging at the left C5-6 and C6-7 levels. Then he received cervical traction for two months, but had no significant improvement. Therefore, he was treated with acupuncture and injection therapy to the active MTrPs. However, the pain relief only last for 1-2 weeks after each injection.

Further examination revealed that he had positive facet sign in the left side (left rotation of neck followed by neck extension) with pain radiating to the rhomboid muscles (similar to his regular pain complaint). Digital compression over the left C5-6 facet joint reproduced the symptom. Computer tomogram revealed sclerotic change over the left C5-6 facet joint and opacification of the posterior longitudinal ligament (O.P.L.L.) (Fig. 1). Therefore, an injection with 4 mg of betamethasone plus 0.5 cc of 1% lidocaine was given to the left C5-6 facet joint and the periarticular region. This patient is skinny and he has little subcutaneous fat. Therefore, it is very easy to palpate the facet joint. The syringe was held by the dominant hand of the physician who did facet inject. The index finger of the non-dominant hand compressed the articular joint in a direction parallel to the spine. It is very easy to feel the protruding portion of the facet joint. Immediately after injection all MTrPs in the neck and upper back became inactive. In a follow-up examination 2 months later, no active MTrPs could be identified. No recurrence of symptom was reported in a follow-up phone call 15 months later.

DISCUSSION

The common causes of chronic neck and upper back pain included MPS due to faulty posture or chronic repetitive minor trauma from prolonged work loading, a

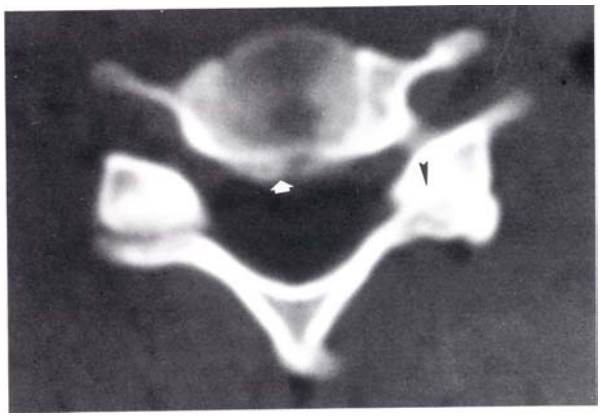

Fig. 1. Sclerotic change of the left C5-6 facet joint (arrowhead) and opacification of the posterior longitudinal ligament (white arrow) on the CT scan.

residual of acute trauma, cervical radiculopathy due to cervical disc herniation or any other lesions, fibromyalgia syndrome, and cervical facet lesion. In case of chronic neck and upper back pain with normal findings in neurological examination, myofascial pain syndrome or cervical facet lesion is frequently the cause of pain [1,4]. The cause of MTrP is still unknown, but it may be associated with or caused by other soft tissue lesions [5]. Facet joint lesion is a possible cause of MTrPs.

Cervical facet joint includes atlanto-occipital articulation, atlanto-axial articulation, and the zygapophysial joints from C2-3 to C7-T1. They are synovial joints innervated by the medial branches of the posterior rami of comparable cervical roots [2].

Previous studies demonstrated that cervical facet lesion could cause pain in the head, neck, and upper back. In a study by Aprill et al, 129 of 318 patients with neck pain received diagnostic facet joint injection [4]. Eighty-one patients had pain relief. Thus referred pain due to facet joint lesion is not uncommon [4,6,7]. Approximately 25% of patients with neck pain have cervical facet lesion as a cause of pain. MTrPs can be identified over the area of referred zone. Dreyfuss and Dwyer [8] injected contrast medium into the facet joint of normal volunteers to elicit the referred pain and demonstrated its distribution in different areas of the neck and upper back. For example, injection of the C2-3 facet elicited referred pain in the neck posteriorly onto the occiput; injection of C3-4 elicited the pain extending along the neck from the suboccipital region; injection of the C4-5 facet elicited referred pain in the angle formed between the neck and shoulder girdle; injection of the C5-6 facet elicited referred pain in the base of the neck across the supraspinous fossa to the deltoid muscle; and injection of C6-7 facet could produce referred pain covering the scapula over its medial border and below its spine (Fig. 2).

Several studies demonstrated a complete pain relief in the neck after facet injection of local anesthetic agent with a dose less than 1cc [9-11]. With this small amount of local anesthetic agent, the effectiveness is primarily due to the selective facet block or innervated nerve block rather than an effect due to perfusion [12]. Bugduk and Marsland [9] recommended injection of C5-6 facet joint to relieve the referred pain in the lower neck and shoulder

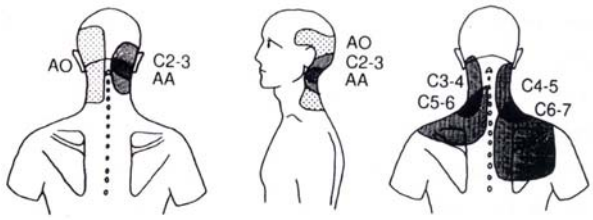

Fig. 2. A map of the characteristic areas of pain referred from cervical zygapophysial joints of C2-3 to C6-7.

areas; C2-3 facet injection for relief of referred pain in the occipital and frontal region; and C3-4 facet injection for the relief of referred pain in the posteriolateral aspect of the neck. These procedures would help to distinguish the facet lesions at different levels. Another study showed that manipulation of cervical spine also has significant value [13]. It is likely that trigger points (probably sensitive nerve endings) also exist in the facet or its joint capsule. These trigger points could be sensitized due to facet lesion (such as synovitis, joint capsule sprain, or even osteoarthritis). The myofascial trigger points in the C5-6 muscles (rhomboid, supraspinatus…etc) sensitized through central sensitization [14].

The facet lesion is frequently ignored in clinical practice, probably due to (1) difficulty in identifying the facet lesion during regular physical examination, (2) difficulty in differential diagnosis with other soft tissue lesions due to the similarity of clinical manifestations, (3) poor sensitivity of regular radiological examination to identify facet lesion.

Recent studies demonstrated that controlled diagnostic injection technique with placebo controls such as normal saline or different local anesthetic agent in a double-blind setting may offer the only definitive means of identifying painful facet joints [9,11,15,16]. Manipulation of the cervical spine can also effectively inactivate the pain of neck and upper back [17]. It appears that the mechanical stimulation to the facet joint is the major mechanism for pain control. This is similar to the

mechanism of needle stimulation to inactivate a MTrP [18,19].

In this case report, we have demonstrated that cervical facet injection could effectively relieve the MTrP pain in the neck and upper back which could only be temporarily relieved by direct injection to the affected MTrPs. Therefore, when a patient with chronic pain in the neck and upper back shows no long-term therapeutic effect from the local MTrP injection, cervical facet lesion may be the primary cause of MTrP and facet injection will be the only solution for long-term relief of pain.

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經由小面關節注射來控制復發性肌膜引痛點：病例報告

李佩倣　林伯威*　謝霖芬　洪章仁**

新光吳火獅紀念醫院復健科　台北市立萬芳醫院復健科*

美國加州大學 Irvine 分校復健科**

復發性肌膜引痛點（MTrP）可能與不易辨識的慢性軟組織病變有關，甚至可能由它所引起。本文將報告一個上背部復發性肌膜引痛點，經由小面關節（facet or zygapophysial joint）注射而成功控制疼痛的病例。這是一位 40 歲男性病人，因持續 6 個月漸進性左側上背部疼痛、麻木及頸部僵硬至復健科求診。臨床上發現在左側提肩胛肌（levator scapulae）、大小菱形肌（rhomboid major and minor）、上斜方肌（upper trapezius）及上後鋸肌（serratus posterior superior）有活動性肌膜引痛點。肌電圖檢查發現有雙側慢性第六及第七頸神經根病變，而磁振造影證實在左側第五/六和第六/七頸椎間有輕微椎間盤凸出 。經兩個多月頸椎牽引、局部引痛點注射及針灸治療，症狀無明顯改善。 進一步檢查發現左側第五/六頸椎小面關節有壓痛點，並引發左上背肌膜引痛點之疼痛，故在第五/六小面關節施以 4 毫克 betamethasone 加 1% lidocaine 0.5cc 局部注射。注射後症狀立刻緩解。兩個月後複診檢查，病人已無疼痛現象。一年半後再以電話追蹤，背痛完全緩解且無復發現象。由以上可知，當病人有上背部復發肌膜引痛點時，可能也要檢查頸椎小面關節是否有與引痛點相關之病灶，而適當的局部小面關節注射，對復發性肌膜引痛點控制可能有極大的幫助。（中華復健醫誌 1998; 26(1): 41-45）

關鍵詞：頸部疼痛(neck pain)，小面關節(facet joint)，小面關節注射(facet injection)，肌膜引痛點 (myofascial trigger point)

抽印本索取地址：洪章仁，美國加州大學 Irvine 分校復健科
電話：0021-714-456-6672