

# Myofascial Pain, and the Spraying and Stretching Technique

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### I. INTRODUCTION

Myofascial pain is a regional myogenic pain condition which is characterized by trigger points and central excitatory effects, such as the referred pain phenomenon and autonomic effects. Trigger points are localized in muscle tissues or by their tendinous attachments, which often have the feeling of taut bands when they are palpated and elicit pain. These pain are generally produced with predictable patterns according to the location of trigger points involved. Besides the referred pain, other central excitatory effects, such as secondary hyperalgesia, protective co-contraction or autonomic effects could be felt. Myofascial pain which is very common among people distresses at least once or more in almost everyone's life. The severity degree of symptoms from myofascial trigger points can be leveled from mild dysfunctions in the latent trigger points to acute incapacitating pain caused by very active trigger points. The followings are etiological factors of clinically related: soreness of protracted

local muscle, constant deep pain, increased emotional stress, sleeping disturbances, localized and systemic factors and the mechanism of idiopathic trigger points.

The treatment of myofascial pain is directed to eliminate or reduce etiologic factors. One of the most common and conservative methods for eliminating trigger points is by spray and stretch technique. For example, the technique of vapocoolant spraying of fluoro-methane on the tissue, overlays the muscle with a trigger point and then stretches the muscle. Other treatment modalities are injections and stretching, ischemic compression, massage, ultrasound, heating, biofeedback and transcutaneous electric stimulation.

### II. CASE REPORTS

#### CASE I

##### *1. Chief Complaint, Present Illness and History*

A 47-year-old man came to the dental office complaining the masticatory difficulty and multiple pain of his face, head, and TMJ of all in the right unilateral side. Pain in the right cheek had been presenting for about 15 days; and had pain on the right TMJ, followed by the diffused dull pain in the right half of back head from the day before. Clinical examination revealed the unassisted maximum opening of 60 mm without any difficulties. Neither



joint sound had been noticed or presented before through the patient's history. Palpation revealed tender and firm taut bands only in the right superficial masseter among head and neck muscles. There was no significant finding on intraoral examination.

### 2. Diagnosis and Etiology

Myofascial pain is in the right superficial masseter. A few trigger points in the superficial layer of right masseter were thought to refer pain of the right TMJ region, and the right half of back head. Followings were considered as etiologic or perpetuating factors; elevated emotional stress from his job, muscle hyperactivity (clenching), as he knows for himself, and acute overworking fatigue in related muscles which could be noticed from incidental chewing tuff foods.

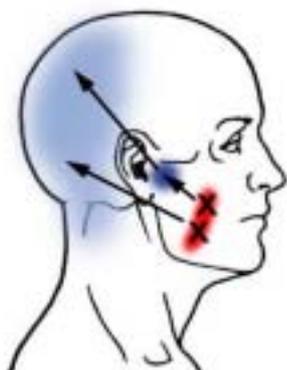
### 3. Treatment

Trigger points in the right superficial masseter was sprayed and stretched. Next, ultrasound and electroacupuncture stimulation therapy(EAST) were applied to the muscle involved. Muscle relaxant with an analgesic was prescribed on a daily basis. The patient was told of instructions regarding myofascial pain and how to control it. He returned to the dental office a week later and took the same treatment regimen again. At this revisit, he was encouraged to perform passive opening exercise with hot pack on his cheek at home. Another week later, he came and reported a great improvement of symptoms which had distressed him so far. Just as he described, he had been recovered from about 98% from the discomfort. Clinical examination verified the treatment outcomes, revealing no tenderness or tautness in the right superficial masseter and no other significant findings about other muscles and joints at all.

### CASE II

#### 1. Chief Complaint, Present Illness and History

A 53-year-old woman visited the dental office, complaining of swelling and gravity sensation in the inferior aspect of the lower jaw and stiffness in the back head. These symptoms had been continuously presented for more than 2 months, showing the characteristic diurnal pattern that feels better in the



morning, worse in the afternoon. Her medical and dental history exhibited following facts which she had pursued a treatment from a physician and a otolaryngologist for the same reasons above but it had been resulted in vain and became a long-term dental patient over one year from the early last year in Chonnam National University Hospital.

On a clinical examination, joint sound was not heard in TMJ. Maximum 58mm of mouth opening without assistant was measured. The patient was unwilling to repeat mouth opening wide, reporting the dislocation sense of jaw joints whenever she opens her mouth wide. Palpation test revealed multiple tender taut bands suggesting trigger points, through the entire sternal division of the right sternocleidomastoid muscle and, only tenderness in submental, submandibular region bilaterally and the right posterior mandibular region.

## 2. Diagnosis and Etiology

Myofascial pain is in the sternal division of the right sternocleidomastoid muscle. Local muscle soreness is probably in suprahyoid muscles.

Multiple trigger points in the right sternocleidomastoid muscle were presumed to contribute to the pain reference to the back head and, submental and submandibular region. Strain on head and neck muscles caused by the poor posture, emotional stress resulting from complicated dental problems and a long-lasting treatment schedule, along with inherent joint disorder (subluxation) were taken into account as possible etiologic or perpetuating factors.

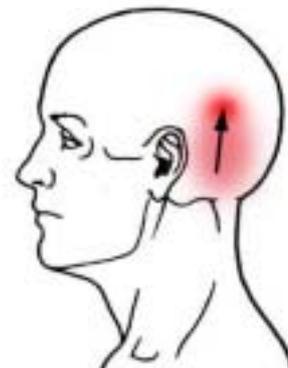
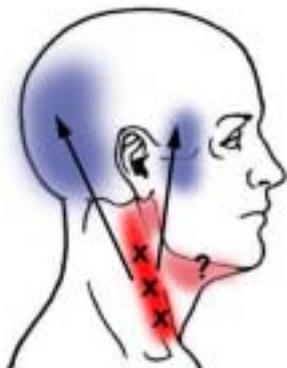
## 3. Treatment

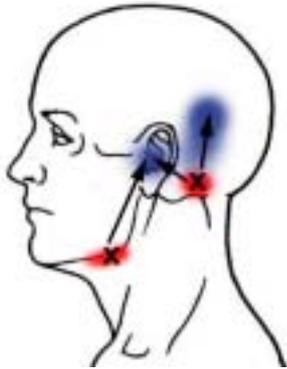
Trigger points in sternocleidomastoid muscle were managed with spraying and stretching, followed by the ultrasound therapy. An explanation was given to the patient regarding the possible role of the etiologic and aggravating factors in myofascial pain. She had been recommended to be relaxed, and to correct her posture, and to limit the mouth opening within the subluxation, when she went back home. A week later, she came to the dental office again and reported the remarkably decreased feeling of dull weighty discomfort. On palpation, residual weakened trigger points in the sternal division of the right sternocleidomastoid muscle were identified.

## CASE III

### 1. Chief Complaint, Present Illness and History

A 60-year-old man came to the dental office, complaining the moderate prickling pain at the rear left ear that had been bothering him for a month or so. There had been some sharp pain in around the left retroauricular area to the upper direction as well. Palpation revealed a taut band with moderate tenderness at the upper attachment of left sternocleidomastoid muscle, and another taut band with mild tenderness at the lower insertion area of left medial pterygoid muscle. On intraoral examination, the left upper second molar having complex conservative and periodontal problems, generally poor oral hygiene and heavy calculus deposits were found.





On the day he visited the dental office, he already had been complaining to an otolaryngologist of tinnitus and retroauricular discomfort in the same ipsilateral left side for one month. According to the doctor's document, no hearing impairment or otorrhea was presented, but intermittent nasal obstruction had been found for about one month; hence the plan was set only to follow-up 1 month later without treatment intervention.

### 2. Diagnosis

Myofascial pain is in the clavicular division of the left sternocleidomastoid muscle (containing active trigger points) and the left medial pterygoid muscle (containing latent trigger points).

Trigger points in the clavicular division of left sternocleidomastoid muscle refer not only pain in the left retroauricular region but also autonomic concomitant such as tinnitus in the left ear and the nasal congestion.

### 3. Treatment

Spraying and stretching were initial therapies for this patient. Then he was treated with the management on other dental problems with recommendations for passive stretching exercise of the neck and shoulder muscles.

## III. DISCUSSION

1. Myofascial pain, even though it is caused as common pain and disability as the internal derangement of the TMJ in the head and the neck, attracted little concern for clinicians. It is, therefore, highly suspected that numerous episodes of myofascial pain have not been infrequently neglected and being kept to endure without any proper management.
2. Spray and stretch technique is highly conservative and easy to get its clinical application and provides a therapist with satisfactory results, not provoking much fear or anxiety to a patient, among various treatment modalities of myofascial pain.
3. Chronically-maintained old myofascial pain was generally resistant to spray and stretch, while an acute-onset form responded well to it, in my experience.
4. Spray and stretch technique, although not always effective in the treatment of myofascial pain, is recommended as a preliminary method to approach the case of diagnosis as myofascial pain.

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국문초록

## 근막동통과 분사신장요법

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김 병 국 · 임 영 관

근막동통은 발통점과 중추흥분효과가 나타나는 국소적 근육성 동통이다. 발통점은 근육의 일부나 건 부착점에 나타나는 부위로서 단단한 띠로서 느껴지고 촉진시 통증을 유발한다. 통증은 관련된 발통점의 위치에 따라 연관된 부위에 나타난다. 이러한 근막 발통점에 따른 증상은 약한 기능이상부터 일상생활이 어렵게 되는 정도의 심한 통증까지 다양하다. 이의 발생에는 국소적 근육이상, 심부 동통, 심리적 스트레스의 증가, 수면장애와 전신적인 요인들도 관여한다. 일반적으로 치료는 보존적인 처치로써, fluoro-methane 같은 vapocoolant spray를 사용하는 사용하여 분사신장하는 방법이 있으며, 국소적인 주사, 마사지, 초음파, 온열요법등이 있다. 여러 환자에서 근막동통을 가지는 환자에 분사신장요법을 시행한 결과 대부분 환자에서 증상의 개선을 보였다. 근막동통의 치료시 분사신장요법은 매우 보존적인 처치로 임상가의 적용과 접근이 쉬우며, 환자로 하여금 치료에 따른 불안감을 줄이면서 만족을 느낄 수 있는 치료로 사료된다. 그러나 만성 환자의 경우 분사신장요법의 치료결과에 대한 만족도가 높지 않았다. 분사신장 요법은 근막동통을 가진 환자 모두에서 효과적이지는 않으나 치료의 도입으로, 근막동통을 진단시에 일차적으로 사용할 수 있는 안정한 보존적인 용법으로 사료된다.

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 keyword : 근막동통, 발통점, 분사신장요법