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Case report

Treatment of myofascial pain in the shoulder with Kinesio Taping. A case report

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1. Introduction

Kinesio Taping was a technique developed by Dr. Kenzo Kase in the 70s. The adhesive pliable material, directly applied to the skin, differs from classical tape in its physical characteristics. Furthermore, its clinical application departs from the usual restriction of mobility. This technique claims four effects: to normalize muscular function, to increase lymphatic and vascular flow, to diminish pain and aid in the correction of possible articular malalignments (Kase et al., 1996). This taping technique is frequently applied for pathologies in the musculoskeletal system, especially in the field of sports injuries (Yasukawa et al., 2006; Zajt-Kwiatkowska et al., 2007).

Myofascial pain has been studied by several authors (Simons, 1996; Hong and Simons, 1998; Travell and Simons, 1999; Niddam et al., 2007) and among the manual therapy techniques applied are massage (Gam et al., 1998; Travell and Simons, 1999), compression techniques (Hanten et al., 2000), stretching (Travell and Simons, 1999; Hanten et al., 2000), injection of different substances (De Andrés et al., 2003; Kamanli et al., 2005) and dry needling (Edwards and Knowles, 2003). Notwithstanding the above, there is an absence of references documenting the application of Kinesio Taping in the treatment of pain arising from myofascial trigger points (MTPs).

This case report documents the results achieved with Kinesio Taping as the exclusive therapeutic procedure for the treatment of a patient with shoulder pain of myofascial origin.

2. Case report

2.1. History

A 20-year-old female patient was seen due to pain of two days duration in her right shoulder (Fig. 1). The pain, extremely intense from the beginning, intensified 48 h after awakening, and had not diminished. The intensity of the pain did not wake the patient and although she usually adopted a supine position, the pain was not related to any specific posture during sleeping.

Previous clinical history included a diagnosis of rotator cuff pathology in the same shoulder induced by her activity as a swimmer. Subsequently, the patient had not been training for one year and this had completely resolved the complaint. The current pain episode was treated from the beginning with NSAIDs (ibuprofen 1-1-1) and gastric protector (magaldrate anhydrous), short wave and transcutaneous electrical nerve stimulation (TENS), with no improvement. The patient did not endure the TENS and this treatment was discontinued.

2.2. Examination

The clinical examination findings are as listed below:

- Restricted shoulder mobility caused by pain, assessed by goniometry and Apley's scratch test (McFarland, 2006) for the most representative movements, in order to avoid the

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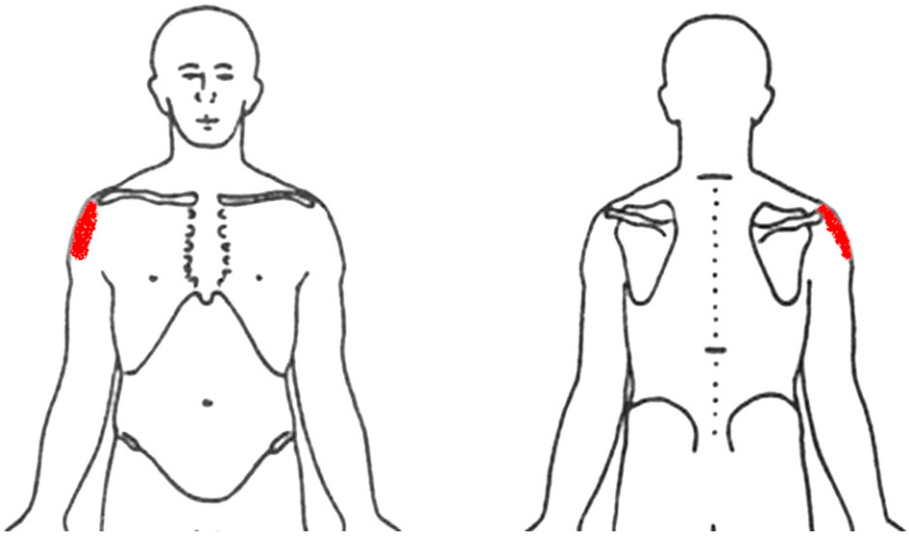

Fig. 1. Body chart showing painful area.

increasing irritation suffered by the patient. The goniometry measurements disclosed a range of movement of 35° and 54° for abduction and flexion respectively. The same movements were painful but almost full range when tested passively. External rotation was measured in the anatomical position with the elbow at a 90° flexion, hence obtaining a result of 90°, both actively and passively. From a more functional point of view, superior and inferior Apley's scratch tests (McFarland, 2006) were examined. In the superior test, pain inhibited the action, and in the inferior test her fingertips reached the inferior angle of the scapula, although the left upper limb fingertips contacted the cervicodorsal junction.

- Visual Analogic Scale (VAS) scored 10 in movement and 5.85 in the resting position.
- No results were obtained for Jobe's test (Buckup, 2008), palm up and specific for positive deltoid, and the test of painful arc. In Jobe's test, the lack of results was due to it not being possible to support the upper limb in the correct position to undertake the test.
- The sub deltoid bursa, rotator cuff tendons and short and long heads of biceps brachialis were painless at palpation. However, several taut bands were felt with active MPTs in anterior and medial deltoid fasciculi. Following the protocol described by Fischer (1988, 1997), pressure pain thresholds (PPT) were measured with an analogic algometer (Wagner Instruments. Greenwich, USA) and scored 0.5 Kg/cm^2 to induce the pain.
- The active and passive physiological movements of the cervical spine were painless and full range. The anterior and posterior cervical quadrant tests (Maitland et al., 2007) were normal.

2.3. Physiotherapeutic diagnosis and treatment

Based on the onset of the pain and the results of the clinical examination, the authors hypothesize an activation of the MTPs in the anterior and medial deltoid fasciculi, although the patient did not relate the pain with any specific activity in the 24 h prior to symptom onset. For this reason the authors followed the essential diagnosis criteria for MTPs described by Simons et al. (2002) (Table 1). The treatment of choice for the myofascial pain of the deltoid muscle was an application of Kinesio Taping for the deltoid, reinforced by a transverse strip over the region where the MTPs are located as shown in Figs. 2 and 3.

Table 1
Diagnostic criteria recommended for the identification of MTPs actives and latents (modified from Simons DG, Travell JG, Simons LS. Dolor y disfunción miofascial. El manual de los puntos gatillo. Mitad superior del cuerpo, 2ª Edición. Madrid: Editorial Médica Panamericana, 2002).

Essential criteria:
1. Palpable taut bands (if muscle accessible).
2. Local pain sensitive to pressure over a nodule on the taut bands (focally).
3. Recognition of usual pain suffered by the patient pressing on the sensitive nodule (identification of active MTPs).
4. Painful restriction of the full range of motion on passive stretching.

Confirmatory observances:
1. Visual or tactile identification to twitch response.
2. Distinction of a twitch response induced by needle puncture of the sensitive nodule.
3. Pain or sensibility alteration (in the predictable distribution of a MTPs in the muscle) by compression of the sensitive nodule.
4. Electromyographic demonstration of spontaneous electrical activity representative of the active *loci* located in the sensitive nodule of the taut bands.

Fig. 2. Kinesio Taping application for deltoid muscle.