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PROSPECTIVE CASE REPORT

Efficacy of myofascial release techniques in the treatment of primary Raynaud's phenomenon

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KEYWORDS
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Summary
Objective: This study investigated whether myofascial release techniques performed on upper body connective tissue could mitigate the frequency, duration or pain intensity associated with primary Raynaud's phenomenon.
Methods: Five treatments were administered over a 3-week treatment period on a 35-year-old female experiencing primary Raynaud's phenomenon for the past 12 years. A log was kept documenting frequency, duration and severity of pain. The myofascial work targeted the upper back, neck and arms according to hypothetical fascial meridian lines.
Results: Symptom duration was the one characteristic that showed improvement. After the first treatment, the duration of the subject's vasospastic episodes was reduced by almost half and continued to decrease throughout the 3 weeks of treatments. Neither the frequency or number of affected digits varied significantly from the pre-treatment weeks.
Conclusions: The results suggest that by releasing restricted fascia, myofascial techniques may influence the duration and severity of the vasospastic episodes experienced in primary Raynaud's phenomenon.

Introduction

In his doctorate thesis of 1862, Auguste-Maurice Raynaud first described this syndrome as "symmetrical gangrene of the digital extremities" (Raynaud, 1862). Raynaud's phenomenon is a paroxysmal, exaggerated vasospastic response of the fingers and toes typically precipitated by exposure to cold (Herrick, 2005). It presents clinically as pallor from the loss of arteriole blood flow, cyanosis from the de-oxygenation of static venous blood and finally rubor, from a reactive hyperemic return of blood flow. There is often accompanying numbness with the pallor, followed by throbbing pain as blood flow returns. The manifestations usually progress from the tips of the fingers to the proximal phalanges.

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The duration of an attack can vary from seconds to hours (Bowling and Dowd, 2003).

Raynaud's phenomenon

Raynaud's phenomenon can be classified as either primary (idiopathic) or as a secondary manifestation to a number of different conditions. Numerous underlying pathologies have been associated with secondary Raynaud's phenomenon and include the following: connective tissue diseases, such as scleroderma; trauma such as vibration-induced injuries or thoracic outlet syndrome; arterial diseases; endocrine disorders; hematological disorders and cancers; and certain drugs and toxic agents such as β-blockers (Gayraud, 2007). Despite much investigation, the pathophysiology of primary Raynaud's phenomenon (PRP) is still poorly understood. This raises the possibility that PRP may not actually be idiopathic, but rather secondary to a condition that has yet to be identified.

Key features of PRP include the facts that it occurs more often in women than in men; the age of onset is usually before 40; there may be a familial component; it is more prevalent in colder climates, and smoking, caffeine and alcohol may play contributing roles (Herrick, 2005). This case report has focused on the treatment of a client with diagnosed PRP. Photo A.

Pharmacological treatments

A review of the literature found very few non-pharmacological interventions addressing the treatment of PRP and most methods proposed have followed standard allopathic approaches. Calcium-channel blockers are usually considered the first line of drug therapy for Raynaud's phenomenon. They have been found to reduce the number of vasospastic attacks by blocking intracellular calcium ion movement, which decreases smooth muscle contractions and increases dilation of the peripheral blood vessels (Seibold, 1994). In a recent meta-analysis, a 35% decrease in the frequency and severity of episodes with the administration of calcium-channel blockers was reported (Thompson and Pope, 2005). Other clinical trials on substances that induce vasodilation include the use of selective serotonin reuptake and ACE inhibitors (Herrick, 2005) and the use of prostaglandins (Gayraud, 2007). These are all areas that require further research.

Photo A Pallor in middle and distal phalanges.

Alternative treatments

To date, there are no published studies mentioning the use of any kind of massage in the treatment of PRP. Non-pharmacological trials have involved the use of fish-oil supplements to improve the tolerance to cold exposure by acting on the endothelial lining of the blood vessels (DiGiacomo et al., 1989). Other attempts with mixed, long-term results have involved trans-cutaneous infusion of L-arginine or use of a topical nitrate gel to target endothelial dysfunction and increase local release of nitric oxide, which is a powerful vasodilator in the body (Block and Sequeira, 2001). Ingestion of antioxidants such as selenium or vitamins C and E to mediate free-radical-induced vascular injury was undertaken, with no clinical benefits emerging for the treatment of PRP. In addition, studies on the effects of biofeedback have been shown to be ineffective (Herrick, 2000). One study noted some success in reducing frequency and severity of Raynaud attacks through the use of low level laser therapy (Hirschl et al., 2004). Another examined the use of Chinese acupuncture in the treatment of PRP and it was observed that a reduction in frequency of vasospastic attacks lasted for 10 months following treatments, comparable to the effectiveness of calcium-channel blockers (Appiah, 1997). However, due to the complexity of PRP and the lack of an adequate level of proof with any one of these alternative treatments, it is agreed that the best approach thus far is avoidance of the precipitating factors and conservative lifestyle changes (Block and Sequeira, 2001).

The structure and function of fascia

The treatment method in this study was based on a structural approach involving underlying fascial layers. In order to understand the role of fascia on peripheral circulation, a few key points should be highlighted. Fascia is tough connective tissue