**Introduction:** The development mechanism of pain after orthodontic treatment is still unclear, and there are no adequately established methods for its management. We report a patient with chronic numbness after orthodontic treatment who responded to ultrasound (US)-guided fascia release dry needling (DN).

**Methods:** The patient was a 42-year-old male with nothing of note in his past history. His chief complaint was “mandibular numbness” developing immediately after orthodontic surgery using vertical ramus osteotomy performed about 6 years earlier. The numbness extended to the entire face for the 6-year period. MRI of the head and blood analysis in the general hospital showed no abnormalities. There was no interference in activity of daily living. He was aware that his personality had become introverted since the surgery but did not fulfill the criteria for depression. His symptoms did not improve after oral or local treatment by dentists and physicians.

**Results:** When he visited our acupuncture clinic, limitation of mouth opening (dental arch width, 3 cm) and aggravation of pain during mouth opening were observed, although there were no neurological abnormalities. At the bone margin 1 cm anterior to the mandibular angle, there was remarkable tenderness (Visual Analog scale, VAS 80/100) and a stripe-shaped high echoic lesion of the fascia on US images (Fig. 1a). At this site, US-guided fascia release DN was performed once time. Immediately after the treatment, the local tenderness disappeared (VAS 0/100) and the intensity of the high echoic lesion decreased (Fig. 1b), resulting in improvement of mouth opening (dental arch width, 5 cm). In addition, his facial expression was improved.

**Conclusion:** The main cause of the pain in this patient was considered to be abnormal fascia in the surgical wound 1 cm anterior to the mandibular angle after vertical ramus osteotomy. On US images, abnormalities of the fascia were reported to be visualized as stripe-shaped high echoic lesions on the fascia in Japan (Kimura et al. 2017). Palpation and US evaluation may facilitate the identification of abnormal fascia and effective local treatment.

**References**


**BIDIRECTIONAL SKIN TENSION CREATES SUBCUTANEOUS FASCIA MOVEMENT**

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**Introduction:** Can manual bidirectional tension to the skin create subcutaneous movement? The skin and fascia exhibit tenseness (intrinsic tension). Gracovetsky has considered the issues relating to the transfer of forces from the skin surface to deeper tissues, and suggests “While it is not known how much energy can be transferred from the skin surface to the deeper layers, it can be speculated that at least some of the therapist’s energy, applied to the skin, will end up being transferred”. Gracovetsky points to video illustrations of Jean Claude Guimberteau that demonstrate how a force applied to the surface of the skin ends up being dissipated deep into the tissues via a densely interconnected network of collagenous tissues (Gracovetsky 2016). Viscoelastic responses to mechanical forces are determined by their connective tissue (CT) extracellular matrix (ECM) composition and architecture. Mechanical tension can induce changes in the ECM subsequently modulating biological functions (Guimberteau 2012). CT fibroblasts play a pivotal role in both immediate and long-term CT responses to mechanical forces. Ultrasound elasticity imaging is emerging as a powerful non-invasive technique to quantify biomechanical tissue behavior (Wong et al. 2011).

**Methods:** Using ultrafast high frequency elastography we video imaged a relaxed (non-contracting) prone positioned hamstring with the knee fully extended. We lightly gripped the skin with latex finger cots to avoid downward compression and applying a bidirectional slow cyclical rotational torqueing of the skin. The ultrasound transducer head was placed between the bidirectional forces.

**Results:** Imaging captured significant subcutaneous and deeper fascial sliding and movement. This quantifiable movement was observed at depths greater than 3 cm.

**Conclusion:** Skin is directly connected to the underlying subcutaneous and superficial fascia through the reticular cutis fibers. Bidirectional mechanically manipulated skin facilitated sliding and movement. The effect of mechanical forces on connective tissue fibroblasts may be key to the therapeutic mechanism of manual therapies by causing important cellular effects both immediate (activation of signaling mechanisms) and delayed.

**References**


**Phenomenological and Philosophical Aspects**

**STUDY OF THE IDENTITY CHANGES OF A GROUP OF PHYSIOTHERAPISTS WHO PRACTISE DBM FASCIATHERAPY**


**Introduction:** Regarding the opportunity for physiotherapists to integrate knowledge about fascia within their clinical practice and to develop a new perspective about somatic disorders (Kwong & Findley 2014), we hypothesize that physiotherapists practising DBM Fasciatherapy may have made professional adjustments, and in particular identity shifts (Courrad 2012; Courrad et al. 2018). This research investigates the existence of identity changes amongst French physiotherapists who practise Fasciatherapy. A quantitative survey was conducted amongst a population of practitioners, with a view to: (1) Identify the impacts of the changes resulting from Fasciatherapy practice; (2) Exploring and characterizing the existence of various identity profiles.

**Methods:** We used a self-administered customized questionnaire investigating 5 dimensions: professional characteristics, professional identity features, DBM Fasciatherapy practice modalities, changes in professional practice, and impacts on professional and private life. The questionnaire was forwarded through the internet to a population of 446 physiotherapists who practise DBM Fasciatherapy. A k-means method on 7 identity variables (within parameters of perceived identity, presented
identity, projected identity, and displayed identity) revealed 3 identity profiles (A: Physiotherapist profile 17.6%, B: Physio-fasciatherapist profile 55.5%, C: Fasciatherapist profile 26.9%) that appeared significant, characterized and opposed to one another (change to patient base, use of Fasciatherapy modality, Fasciatherapy session, Professional and Personal impact). (Table 1)

Conclusion: Practising Fasciatherapy has an impact on professional practice and identity traits. A significant proportion of practitioners combine the identities of physiotherapist and fasciatherapist, and few of them remain physiotherapists. These profiles are defined with regards to the statutory, professional and practical characteristics of Fasciatherapy.

Fig. 1. Results of a Correspondence Factor Analysis (CFA).

Table 1: Prevalence of intestinal symptoms in control and experimental groups before and after intervention.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Control group</th>
<th>Experimental group</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal pain/discomfort</td>
<td>53.3% 53.8%</td>
<td>66.6% 14.2%*</td>
<td>0.006</td>
</tr>
<tr>
<td>Soft or watery stools</td>
<td>13.3% 15.3%</td>
<td>6.6% 7.1%</td>
<td>0.93</td>
</tr>
<tr>
<td>Very hard stools or unable to eliminate stools</td>
<td>73.3% 69.2%</td>
<td>66.6% 28.5%*</td>
<td>0.009</td>
</tr>
<tr>
<td>Strain required to move bowels</td>
<td>53.3% 53.8%</td>
<td>66.6% 35.7%*</td>
<td>0.02</td>
</tr>
<tr>
<td>Sensation of urgent need to move bowels</td>
<td>6.6% 7.6%</td>
<td>0% 0%</td>
<td>0.03</td>
</tr>
<tr>
<td>Abdominal swelling or distension</td>
<td>26.6% 30.7%</td>
<td>30% 14.2%</td>
<td>0.15</td>
</tr>
<tr>
<td>Difficulty passing gas or excessive passing of gas</td>
<td>40% 38.4%</td>
<td>53.3% 21.4%*</td>
<td>0.03</td>
</tr>
<tr>
<td>Sensation of incomplete bowel movement</td>
<td>53.3% 53.8%</td>
<td>66.6% 28.5%*</td>
<td>0.009</td>
</tr>
<tr>
<td>Anal pain at time of moving bowels</td>
<td>33.3% 38.4%</td>
<td>48% 14.2%*</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Legend: Pose-intervention: one week after last session; *statistical significance level assumed at p<0.05 (X² test)


**VISCERAL MANIPULATION TO TREAT FUNCTIONAL CONSTIPATION IN STROKE SURVIVORS: A RANDOMIZED, CONTROLLED, DOUBLE-BLIND, CLINICAL TRIAL**

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Introduction: Chronic functional constipation is common among stroke survivors. Visceral manipulation can be used as a form of treatment, as it acts on the structures surrounding the bowels that may have lost their normal capacity of resilience. The aim of the present study was to evaluate the effect of visceral manipulation on symptoms of functional constipation in stroke survivors.

Methods: Thirty stroke survivors met the eligibility criteria and were randomly allocated to an experimental group and control group. Both groups were submitted to conventional physical therapy to rehabilitate the functional sequelae caused by the stroke. The experimental group was also submitted to a visceral manipulation approach (sphincter inhibition and mobilization of the large intestine), whereas the control group was submitted to a sham procedure (superficial touching over the intestines). Evaluations were conducted prior to the intervention, immediately after the first intervention session, and one week after the end of the five sessions. The intestinal symptoms rating scale was administered during the pre-intervention evaluation and one week after the end of the intervention.

Results: Significant results were found in frequency of bowel movements of the experimental group after intervention, especially with: reduction of the percentage of patients that had bowel movements once every 3 days (from 53% to 21.4%, p = 0.02) and increase of the percentage of patients that had bowel movements once or twice a day (from 0% to 14.2%, p = 0.04). Significant improvements were also found in intestinal symptoms of the experimental group (Table 1).

Conclusion: Visceral mobilization can be part of a neurologic rehabilitation program to improve symptoms of constipation in stroke survivors.

**Sensory Aspects**

**THE ROLE OF THE AUTONOMIC NERVOUS SYSTEM IN THE DEVELOPMENT OF EXERCISE INDUCED MUSCLE DAMAGE: RESULTS OF AN RCT**

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