

Ultrasound study of thoracolumbar fascia and surrounding tissues in chronic low back pain before and after spinal manipulative therapy

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Purpose

Chronic low back pain has a high prevalence in our society and generally the spinal manipulative therapy is commonly recommended, but there are not a lot of studies that show the effectiveness of this therapy for low-back pain and the changes in thoracolumbar fascia and surrounding tissues.

Relevance

To perform an ultrasound evaluation of the thoracolumbar fascia and surrounding tissues in the lumbar region in human subjects with chronic low pain before, immediately after and 24 hours after to apply a spinal manipulative therapy.

Methods

We study 10 human subjects (6 men and 4 women) with chronic low pain by ultrasound technique. We take several measures: the thickness of thoracolumbar fascia, the thickness of the thoracolumbar fascia and spine erector tendon and the thickness from skin to spine erector tendon. This process was taken in three times: before, immediately after and 24 hours after to apply a spinal manipulative therapy. The therapy applied was the miofascial liberation. These values were always studied just laterally to the L3 transverse process and the dates were analyzed by multifactorial ANOVA (SPSS ®).

Results

There were no significant differences in age, sex but we found significant differences in: 1- the thickness of the thoracolumbar fascia, that increases after spinal manipulative therapy and it becomes to the first value at 24 hours after. 2 - the thickness of the thoracolumbar fascia and spine erector tendon that increases after spinal manipulative therapy and it keeps 24 hours after. 3- The thickness from skin to spine erector tendon that decreases after spinal manipulative therapy and it increases substantially 24 hours after.

Conclusions

This study shows how the spinal manipulate therapy can change the thoracolumbar fascia and the surrounding tissues and these changes can be measures by ultrasound and can allow explaining these effectively.

Implications

It is important to know how the fascias can change with manipulative therapy and how these changes can be useful and be reflected in ultrasound images.

Key words

Manipulative therapy, ultrasound image, thoracolumbar fascia and surrounding tissues changes