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International Journal of Integrative and Complementary Medicine

Case Study

Effectiveness of the Gua Sha Method in a patient with Low Back Pain caused by Bi Syndrome: Case Study

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Article Info

Received: January 29, 2025
Accepted: February 03, 2025
Published: February 05, 2025

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Citation: Andrea Leite Barretto Domingues, Vanessa Valente Chong. (2025) "Effectiveness of the Gua Sha Method in a patient with Low Back Pain caused by Bi Syndrome: Case Study." International Journal of Integrative and Complementary Medicine, 1(1); DOI: 10.61148/ 10.61148/IJICM/ 001

Abstract

The aim of this study was to analyze the effectiveness of the Gua Sha method on pain in a patient with chronic low back pain due to Bi syndrome through a clinical case study. The method included the clinical history of a patient, affected by rheumatological back problems (Bi syndrome), who underwent a manual scraping treatment program using Gua Sha and a specific Chinese oil. The results showed improvements, both in the reduction of pain, especially where there was a greater incidence, and in the range of movements of the spine. Gua Sha was shown to reduce pain and help with the mobility of spinal joints, consequently providing pain relief, a better disposition for activities of daily living and increased self-esteem.

Keywords: Traditional Chinese Medicine; Gua Sha; Pain; Low Back Pain

Introduction

The Gua Sha method is a surface stimulation therapy to prevent and treat diseases, based on the theory of meridians and acupuncture points in Traditional Chinese Medicine (TCM), using specific Gua Sha tools specially made to scrape the surface of the body with appropriate techniques[1]. Gua Sha is a traditional healing technique widely used in Asia by acupuncturists and traditional medicine specialists in East Asia and around the world[2-6]. It is considered an integral part of TCM or acupuncture as a non-invasive and very simple and effective technique[4], originating in prehistoric times and one of the most common treatments in China[7].

Gua Sha is defined as a therapeutic modality that uses smooth-edged tools to scrape or rub the surface of the body to relieve blood stagnation (Xue). It produces therapeutic petechiae which represent a leakage of blood into the subcutaneous tissue[7]. Gua Sha can also be defined as a method of "scraping with pressure", in a unidirectional direction, assisted by an instrument on a lubricated area of the body surface, intentionally creating transient therapeutic petechiae, represented by the controlled leakage of blood into the subcutaneous tissue[3].

Gua Sha treats many types of problems, from acute to chronic, including skin problems such as expression marks and wrinkles, and pain problems such as localized pain and myalgia. Gua Sha is a Chinese term in which "Gua" means to scrape or scratch, and "Sha" means red petechiae, rashes, sand or sharkskin after application. "Gua" also means the precision of repeated, unidirectional tapping with a soft-edged tool[2, 8].

The beneficial effects of Gua Sha are due to its simultaneous actions on the skin, connective tissue, blood vessels, lymph, muscles and internal organs. The simple act of scraping has effects as great as therapeutic massages, lymphatic drainage and cupping therapy, leading to stimulation of the immune system and increased defenses[7]. This method helps to expel toxins that cannot be excreted and eliminated by physiological means; and depending on the form of pressure applied and the number of sessions, it can activate the growth of fibroblasts[4].

Chronic low back pain is a common pathology in the West and can be caused by various situations such as standing or sitting for a long time, trauma, repetitive movements, weight or work overload and poor diet. The perception of pain and its duration varies between patients, but most report intense and persistent pain for more than three months. Low back pain has a high cost and expense for health services and is one of the most frequently cited reasons in medical consultations for absence from work and activity limitations[5].

Although the pathophysiology of chronic pain is not well defined, nociceptors, cytokines and the inflammatory process have a biological influence on the sensation of pain. Other factors have a significant influence, such as gender, age and the anatomy of the spine itself, which leads to altered functional capacity[5].

According to Traditional Chinese Medicine, Bi syndrome has connotations of blockage, i.e. the occlusion that results from the stagnation of Qi (energy) and Xue (blood) in the channels and collaterals, the consequence of which is pain. Bi syndrome can be migratory, painful, fixed and febrile, each with its own characteristics[9].

The Chinese ideogram Bi "痹" means blockage or obstruction. In TCM, this term indicates obstruction of Qi and blood energy in the channels (Jing) and collaterals (Luo), due to pathogenic factors such as wind, cold, humidity and heat, which produce pain, numbness and disturbances in the body[9].

In the case of the patient in this study, she has two types of Bi syndrome. The first type is Painful Bi (due to cold) whose clinical manifestations are bluish skin, intense unilateral pain that causes functional limitation and decreased range of movement, pain is relieved by heat and increases/worsens with cold, absence of inflammation at the site, presence of contracture, normal tongue, or pale white coating, deep, tense and slow pulse. And the second type is Bi Fixed (due to humidity) whose clinical manifestations are numbness of the skin and muscles, heaviness in the body and extremities, localized pain, arthralgia, direct relationship with rainy and cloudy weather, osteoarthritis, rheumatoid arthritis, normal or enlarged tongue, sticky white coating, thin, shallow and slow or slippery pulse[9].

The general aim of this case study was to analyze the effectiveness of the Gua sha method in a patient with low back pain caused by Bi syndrome, to highlight the action of Gua Sha locally, to verify its physiological effects on the low back and the reaction after treatment. And, to publicize this TCM method, which is still unknown in the West, aimed at cases of low back pain and opening the way for new research on this subject.

Case Presentation

The study involved a 58-year-old patient with chronic pain and spinal problems, particularly in the lumbar region. She had a medical diagnosis of scoliosis, degenerative discopathy, discarthrosis, mild stenosis of the central canal, osteophyte disc protrusion between L1-L5 and S1 according to the report of a "Lumbosacral Computed Tomography" (CT) scan. During the treatment, she avoided taking painkillers and started doing Pilates physical activity.

An anamnesis was taken of the patient's medical follow-up and the respective medical examinations carried out previously. A physical examination was then carried out with images recorded using the mobile phone's camera (figure 1) and the muscle tone of the region to be treated was assessed by palpating the pelvic muscles during all the sessions.

Figure 1 - Patient in The Study

Source: Personal Archive

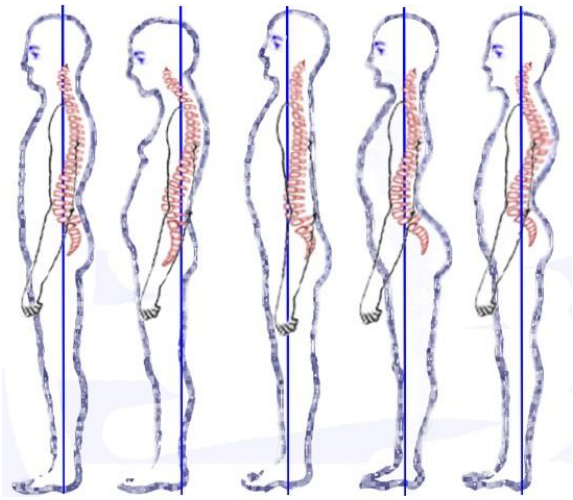
According to the general assessment of the patient and in the observation process, it can be seen that she has a "Sway Back" type spine known as "backward leaning posture" (figures 2 and 3). Sway back posture shows an increase in anterior hip inclination and thoracic kyphosis compared to neutral posture. This postural change is associated with increased activity of the rectus abdominis muscle, decreased activity of the internal oblique abdominal muscle and decreased activity of the iliopsoas and gluteus maximus muscles in the hip joint. The leaning back posture reduces the contraction of skeletal muscles, thus applying stress to the skeletal

system, which is a factor unrelated to contraction and leads to an increase in the stress applied to the lumbar region. Backward leaning is a specific type of poor posture that often causes back pain. People who have a backward leaning posture have exaggerated curves in the spine, hips tilted forward and the appearance of leaning back when standing[10].

Figure 2 - Profile Study Patient

Source: Personal Archive

Figure 3 - Four main types of non-structural misalignment of body posture in the sagittal plane: straight back posture, backward leaning posture, normal posture, lordotic posture and kyphotic posture, respectively. Each of the postures can disturb the physiological load of the musculoskeletal system in a specific way, which can lead to a functional disorder.



Source: https://www.physio-pedia.com/Sway_Back_Posture

According to TCM, the patient's energy imbalance patterns are Kidney Yang Deficiency - due to her age, which according to Su Wen, women are governed by the lunar cycle and suffer from changes in their bodies every 7 years; Spleen Yang Deficiency - a consequence of the previous pattern and a worsening of the Spleen Qi Deficiency condition, in which case the patient begins to show symptoms of cold and muscle pain; Bi Syndrome - due to painful obstruction.

The patient then underwent a treatment program consisting of one 40-minute session a week, with a 6-day break between sessions, for approximately 4 months, for a total of 15 sessions. In each session, the 40 minutes were divided between both sides of the spine, regardless of the presence of contractures or myoarticular problems, with moderate to strong pressure applied, however the patient's reaction was mild. The sessions consisted of unidirectional scraping applied with a Gua Sha made from buffalo horn (figure 4) and a specific oil of Chinese origin (figure 5), whose function is to help warm up and increase local microcirculation.

Figure 4 - Gua Sha Applied in the Study

Source: Personal Archive

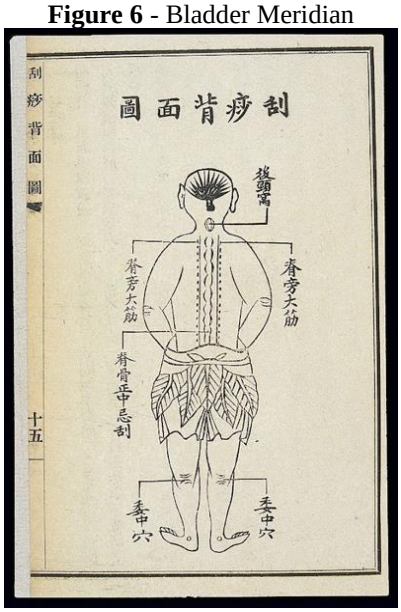
Figure 5 - Oil Used in the Study

Source: Personal Archive

Scraping was carried out on the Bladder meridian (figure 6), on the internal and external branches, starting at the Da Zhu point (Bladder 11) up to the Ci Liao point (Bladder 32), and Gua Sha was also applied to the Ashi points. The pressure applied was moderate to strong, with the aim of unblocking the Qi and blood in this channel, as well as relieving pain, improving joint mobility and consequently the patient's daily life.

Another objective was to increase tissue microperfusion, bringing anti-inflammatory cells to the site of the greatest incidence of pain and metabolic toxins; to try to increase the level of pro-inflammatory cytokines and decrease the level of immunosuppressive cytokines; and finally, to tonify the Kidney meridian by scraping over the Shen Shu point (Bladder 23)[2, 4, 8]

Figure 6 - Bladder Meridian



Source: Personal Archive

Results

The results showed improvements in the reduction of pain, especially where it was most prevalent, and a greater range of movement in the patient's spine. It is also important to note that the patient was free of back pain for 2 to 3 days and had a feeling of freedom in the muscles that make up the lumbar region. The photographic images corresponding to figures 7 and 8 show the back after the session and the patient's reaction on each side of the spine.

Regarding muscle tone, there was no change since this type of treatment does not serve to strengthen muscles, but there was an obvious increase in muscle relaxation.

The data was analyzed by asking the patient about pain relief, her mobility in the spine and how she felt in the three days following the application of Gua Sha, always at the beginning of the next session.

Figure 7 - Study Patient - After Gua Sha Both Sides

Source: Personal Archives

Figure 8 - Study Patient - Left Side

Source: Personal Archives

Discussion

Gua Sha therapy not only increases superficial micro perfusion, but also produces an immune anti-inflammatory effect, increases antioxidant levels in the liver, prolongs endurance time and increases the quantity of white blood cells and neutrophils[6], in addition to neuroregulatory, anti-inflammatory and antioxidant effects[1].

Although scraping with Gua Sha involves abrasion or injury to the surface of the skin[8], in cases of pain the method should be carried out more intensely, but without causing major tissue damage, but constant pressure and rhythm should be maintained. The tools used to apply Gua Sha range from a flat coin, a Chinese soup spoon or even a slice of ginger to instruments made of cow bone, such as buffalo horn[11].

By scraping with a specific oil, the skin undergoes a residual cleansing process like a body scrub, eliminating dead cells and toxins. This is why Gua Sha promotes increased blood circulation, restores the metabolic process, stimulates the flow of Qi and blood and unblocks the meridians and their collaterals[4, 5]. In the case of this study, we worked on the Bladder channel, which makes up the Tai Yang energy layer, including the back. As the Bladder channel lies parallel to the spine, its points are also used to treat various symptoms such as acute pain in the lower back and legs, sciatic nerve pain, headaches and stiffness in the back of the neck.

The act of scraping may be able to cause local stimuli in the skin and modulate defensive functions by increasing Wei Qi (immunology), it can activate fibroblast proliferation, and thus Gua Sha induced blood extravasation and controllable damage to skin tissue can lead to the process of tissue repair[4, 5].

The pathophysiology of Bi syndrome is linked to the presence of hidden energy, latent Fu Qi, defective genetic inheritance, Kidney Yang deficiency, Spleen Qi insufficiency and vital energy deficit (Zheng Qi), all related to an age problem, exhaustion, nutrition

(deficiencies or excesses), feelings and traumas, where after the trauma the vital energy does not circulate as before in affected areas and in this case, in the lumbar region, which favors the invasion of external pathogens of the Bi syndrome[9].

The skin serves as a barrier between the external world and the internal environment, but it has numerous functions that go far beyond this role, such as homeostatic regulation, temperature maintenance, prevention of percutaneous loss of fluids, electrolytes and proteins, immune surveillance and sensory perception[4]. Therefore, regular use of the Gua Sha practice can promote the growth of new cells, boost the immune system, promote the free flow of Qi and blood. Therefore, the Gua Sha technique can stop the pain and inflammation associated with blood stasis and is superior to acupuncture treatment[2].

According to Chu Eric et al, petechiae, known as "Sha", form when capillaries rupture and blood is drawn to the surface, disappearing between 2 and 5 days. This "Sha" process occurs through the lysis of erythrocytes and the cellular dentrites are removed by macrophages. While Nielsen (2009), reports that Gua Sha tends to increase surface blood flow by 400% during the first 7.5 minutes, maintaining significant increases for a period of 25 minutes. Gua Sha seems to sustain an increase in microcirculation to a greater extent and for longer than acupuncture or massage. The fact that Gua Sha is identified with a large increase in superficial perfusion proves that there is a measurable physiological impact of this technique.

Conclusion

The use of Gua Sha in the treatment of low back pain is still lacking in terms of scientific studies. The few studies that do exist deal with the treatment of Gua Sha in pain relief, such as low back pain, neck pain and even in the treatment of oncological diseases. The increase in blood perfusion is a partial understanding of the Gua Sha biomechanism, so more studies are still needed to elucidate other biomechanisms associated with its therapeutic effect. The action of Gua Sha generates better blood microcirculation, which causes an increase in the amount of blood and cell renewal. Regular use of Gua Sha can therefore reduce muscle pain and improve range of movement.

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