



Case Study

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Lian Gong for Treatment in Fibromyalgia: Case Study

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Abstract

Objective: As Complementary Integrative Practices (CIPs), Lian Gong has been increasingly used in the practice of Physiotherapy. This study aims to verify the side effects of Lian Gong in a patient with fibromyalgia.

Material and Methods: In this case study the patient was diagnosed with fibromyalgia at 29 years ago and sought care in memory of discontent with previous treatments. Intensity was assessed with a visual analog scale (VAS), quality of life with SF-36 and the pressure pain threshold algometer (PPT). There were 16 visits with two weekly 60-minute sessions, when the patient was re-evaluated, a Global Perception of Change (GPC) scale was added to assess general health. A folder was submitted to the patient for follow-up of exercises at home and oriented to return after 4 weeks (follow-up period).

Results and Discussion: The results mark improvement in pain, functional capacity and general health. As a first therapy treatment, Lian Gong proved promising results in one case of fibromyalgia.

Conclusion: Its possible benefits when combined with other forms of care should be explored by clinical trials to expand their knowledge and real action potential.

Keyword

Fibromyalgia, Qi Gong, Modalities of physiotherapy, Rehabilitation, Quality of life, Traditional Chinese medicine

Abbreviations

UNILUS: Centro Universitário Lusíada; CIPs: Complementary Integrative Practices; GPC: Global Perception of Change; NPICP: National Policy of Integrative and Complementary Practices; PPT: Pressure Pain Threshold; TCM: Traditional Chinese Medicine; Unioeste: Universidade Estadual do Oeste do Paraná.

Introduction

Fibromyalgia is a chronic, rheumatic disease of undefined cause, likely to occur due to abnormalities in neuroendocrine regulation and as a response to stress, has a higher prevalence in women between 40 and 60 years of age [1]. Despite the rheumatology approach, there are common neuropathic symptoms (paresthesia, numbness, and thermal sensitivity). Its incidence is 2-4% in the general population, with diffuse muscle pain as its main characteristic, which can be related to a three-fold level of P substance in the cerebrospinal fluid, indicating possible changes in the central pain control mechanism, but its etiology remains uncertain [2].

Besides the above, there are other symptoms such as: fatigue, sleep disorders, depression, changes such as hyperalgesia, allodynia, morning stiffness and headache (which can be exacerbated by hormones), physical and mental stress, temperature changes, changes in diet and sleep window [1]. The

diagnosis is based on a set of symptoms that need to be present for at least three months, with pain in both hemibodies, tender points in eleven (or more) specific areas, generalized fatigue, depression and anxiety [3].

As there is no cure for fibromyalgia, the treatment is based on symptom control and improves quality of life with drug management and non-pharmacological therapies. Physical exercise is part of the forms of treatment indicated in the

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multidisciplinary approach, as well as low power laser, balneotherapy and cognitive-behavioral therapy. Besides the usual practices of aerobic activity, strengthening and stretching, alternative and complementary therapies (Acupuncture, Massage, Meditation, Tai Chi Chuan, Shiatsu, among others) are applied in the management of fibromyalgia, despite the lack of scientific proof of its effectiveness. A recent literature review on the use of such therapies in fibromyalgia has pointed to promising results, however, with the exception that these effects were based on small studies, but given the low risk, they could be considered an adjunct form of treatment. Although Lian Gong was briefly mentioned, there were no major considerations on the subject [1]. In recent years there has been considerable growth in the use of resources beyond conventional Western medicine in rheumatic patients, yet scientific evidence of these practices remains under investigation. Lian Gong is considered to be one of these mind-body interventions that are part of the list of alternative treatment possibilities [1,4].

Of Chinese origin, for more than five thousand years, and practiced by more than 60 million people in China, Lian gong could be defined as the ability to release, strengthen, and direct "life energy" through specific exercises, harmonizing breathing, posture, body movements, and mind. Such energy, which flows through meridians when affected, leads to sickness and its balance determines good overall health according to Traditional Chinese Medicine (TCM) [5,6]. With this line of reasoning, the technique would be in a position to accelerate the self-healing process [6]. They are simple, smooth movements, with a choreographed, rhythmic routine, with respiratory control and can be adapted depending on the needs of the practitioner [6,7]. The technique has been studied in cases of cancer [4], cardiovascular rehabilitation [6], psychoemotional conditions (stress, anxiety and depression) [5,6], geriatric population with chronic noncommunicable diseases (systemic arterial hypertension and diabetes), chronic pain [5] and fibromyalgia [8]. That is, although its effectiveness continues to be investigated, it is aimed at physical and mental well-being and quality of life [8].

In Brazil one of the strategies incorporated to the proposal of health promotion by the National Policy of Integrative and Complementary Practices (NPICP), better known as "CIPs", published in the form of Ministerial Ordinances No. 971 on May 3, 2006 and No. 1,600 on July 17, 2006 [9]. Some Brazilian cities have implemented, within their health policies, the use of Lian gong for the population [10,11].

Since the effects of Lian gong in the West are still little explored, but this resource is indicated in cases of fibromyalgia [8], the objective of this study was to present the effects of the technique, as a single therapy, in a patient with fibromyalgia.

Case Report

The present study is characterized as a case study, being previously approved by the Research Ethics Committee of Centro Universitário Lusíada - UNILUS under number 2,243,010. The patient chosen was on the waiting list of the UNILUS Physiotherapy Clinic, with diagnosis of fibromyalgia.

The patient E.M.L, 46 years, with 1.63 cm height and 67 Kg, had been diagnosed at 17 years of age, and had performed physiotherapeutic treatment (infrared, TENS and hydrotherapy) and medication (muscle relaxant and antidepressant) before, but remained dissatisfied with the results.

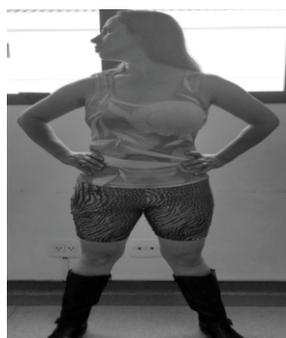
Before the evaluations began, the procedures were explained to the patient and the informed consent form was signed. We applied the visual analog pain scale (VAS - ranging from 0 (no pain) to 10 (maximum pain possible), SF-36 quality of life questionnaire (0-100, which evaluates functional capacity, physical aspects, pain, general health status, vitality, social, emotional and mental health) and the pressure pain threshold (PPT) (Tester® - Kgf) on the 18 points related to the tendon points of individuals with fibromyalgia (adding the maximum pressure supported at all points, to generate a single final value) [4,5,12].

We also analyzed which Lian gong movements the patient would be able to perform correctly or need only minimal adjustments, and then, the treatment plan was constituted. After the second meeting, the sessions lasted 60 minutes, performing exercises that included the axial and appendicular skeleton, respecting the painful limit. It is therefore recommended that the session be made of six exercises for three series, totaling 18 exercises. From the evaluation of the exercises applicable to the patient in question, each movement was harmoniously performed three times, with respiratory control and following the work sequence of the "anterior and posterior part" of Lian gong's manual, totaling about 20 exercises per session [11]. The treatment was performed for eight weeks, twice a week, reaching 16 consultations.

In the reevaluation, in addition to the items mentioned above, the Global Perception of Change (GPC) scale was added (ranging from - 5 to + 5, positive values indicate greater satisfaction), helping to analyze how efficient the treatment was [13]. After the reevaluation and the end of the clinic visits, the patient received a booklet with photos (Figure 1) showing how to perform the exercises, which she was already familiar with, so that she could continue at home and return for a new reevaluation after four weeks (follow-up). She was also guided to access the following links in case of doubt in the execution: <https://www.youtube.com/watch?v=FgQkYSAmJ6o> <https://www.youtube.com/watch?v=rbXOUiVFLDo>

The other instrument used for general pain assessment, VAS, showed a significant pain reduction effect, occurring 50.9% and 58.4% of reduction at completion and follow-up after treatment, respectively. The SF-36 questionnaire recorded increases (Functional Capacity and General Health Status), stabilization (Physical, Social, Emotional and Mental Health Aspects) and decrease (Vitality) of its values (Table 1).

The evaluation of the pain pressure threshold, recorded a progressive increase in the capacity to withstand pressure of 21.6% at the end of clinic visits and a total of 23.1% when returning for follow-up evaluation. The improvement in the pain accompanied by VAS and PPT, probably has participation in the positive response, noted and maintained at the end and the return to the last evaluation of the study, by grading its improvement by + 3 on the GPC scale (Table 2).



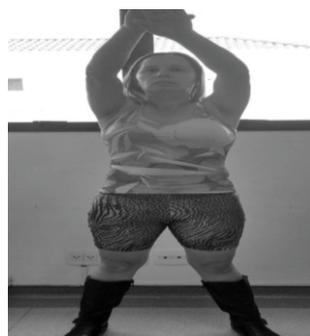
Neck movement



Bow your hands



Clap your hands up



Expanding the chest



Spread your wings



Raise the arm of iron



Push the sky and lean to the side



Rotate the waist and project the palms



Rotate the waist with your hands on your kidneys



Open the arms and flex the torso



Stick with the palm to the side



Rotate your knees left and right



Touch your feet with your hands



Touch the knee and raise the palm



Hug your knee against your chest



Martial Steps



Circulating from top to bottom



Spin the trunk and look back



Kick to the sides



Raise your arms and rotate your fists



Stretch the bow and shoot the arrow



Connecting the upper and lower Qi



Stretch out the palm and the hook hand



Designing the fists



Loosen your arms and rotate your waist



Massaging the face and the sedation point



Massaging the chest and abdomen

Figure 1: Booklet with representation of the exercises to be performed by the participant.

Table 1: Quality of life assessment through SF-36.

	Begin	End	Follow-up
Functional capacity	80	80	90
Physical aspects	100	100	100
Improvement of pain	51	51	51
General health status	30	47	57
Vitality	95	90	90
Social aspects	100	100	100
Emotional aspects	100	100	100
Mental health	84	92	84

Table 2: Parameters linked to pain and general improvement.

	Begin	End	Follow-up
VAS	5.3	2.6	2.2
PPT	1315	1600	1620
GPC	*	+ 3	+ 3

VAS: Visual Analogue Scale; PPT: Pressure Pain Threshold; GPC: Global Pain Change

Discussion

Use of Lian gong has proven useful as a unique therapy in the treatment of fibromyalgia in the case studied. These findings corroborate those found in other studies, which describe positive results with Lian gong among the possibilities of alternative and complementary therapy when treating fibromyalgia [14]. The fact that it does not prescribe any specific device or tool for its performance, makes its practice valid in any environment and time. Through TCM, Lian gong would be able to elevate the body's physical energy by promoting the fluidity of qi and blood circulation, as showed by the increased electrical conductivity of meridians. It has already proven effective in preventing bone mineral loss, reducing oxidative stress, increasing antioxidant enzymes, homeostasis of the autonomic nervous system, activation of immune system cells, such as in reducing pain, improving balance, flexi-

bility, agility, strength, fatigue, quality of life and sleep [4,5].

This potentially justifies the improvements in overall pain, functional capacity, and general health status of the SF-36. Generalized chronic pain is the main complaint of fibromyalgia patients and is related to decreased quality of life. This association has previously been demonstrated in the comparison between the Fibromyalgia Impact Questionnaire (FIQ) and the VAS [15]. Despite the short intervention period (8 weeks) and follow-up (4 weeks), these were already sufficient for pain to be minimized at the half of the initial assessment, corroborated by improvement in the other instruments (PPT and GPC). Since with the severity of the pain, there is a reduction in functional capacity. The painful improvement is assumed to have contributed to the increase in Functional Capacity in the SF-36.

The SF-36 was lower than the initial value, only in the item Vitality, there was improvement in pain measured both by the VAS, and the pressure gauge and satisfaction with the proposed treatment via the Global Perception of Change scale. Since diffuse pain is usually the main complaint of these patients and although it has not been altered via the SF-36, the benefit achieved by other assessment instruments (VAS, PPT and GPC) stands out. This improvement in the pain complaint, added to the increase in Functional Capacity and the General Health Status, generates a promising idea of the effects of Lian gong on fibromyalgia.

Commonly used in association with VAS, the pressure algometer in the comparison of individuals with fibromyalgia to rheumatoid arthritis, dyspareunia and controls, shows lower pressure tolerance values, i.e., they feel more pain with smaller stimuli [2]. There are more than 11 painful points in 89.9% of patients with fibromyalgia, with sensitivity of 84% and specificity of 87%. The use of this painful mapping in primary health care has been poorly employed or even poorly performed by untrained professionals [12]. The choice of this as one of the follow-up tools, was possibly to help in the discrimination of diffuse pain and due to its previous use in other studies [2,12]. The increase in pain pressure threshold with the practice of Lian gong generates optimism and the need

for studies with a larger number of participants and time, in order to find out how much improvement is expected with the longevity of a mind-body exercise routine.

GPC is easily and quickly applied, described as clinically relevant in cases of fibromyalgia when related to the patient's general clinical picture and previously used with EVA and body map (18 common tender point sites). The higher the values obtained through the GPC, the better the pain (via VAS and painful points) and all other measures of fibromyalgia severity [13]. What was found was in fact improvement of the painful condition (VAS and PPT) and the GPC.

Since fibromyalgia is not only a musculoskeletal issue, there is psychoemotional involvement, Lian gong fits the demand to be a mind-body therapy [4]. Mental Health of the SF-36 showed this effect during the face-to-face period of the intervention, but it returned to initial values during the four weeks of follow-up. Therefore, the result may have been the engagement of the professional during the sessions and not restricted to the technique.

Since fibromyalgia is not a curable disease, therapies that help control symptoms and improve quality of life are the focus for these patients [1]. As seen, the benefits gained from the practice of Lian gong, its adaptability and low cost, have caused this alternative to spread and conquer followers in Brazil [10]. CIPs such as Lian gong, act in the promotion and integrality of health, surpassing the rooted curative model as the assertive one. It is common for Lian gong to be practiced in groups, providing socialization, strengthening of the professional-patient relationship, and amplification of the individual's notion of his or her general state of health through contact with others in similar conditions. The use of Lian gong in cases of fibromyalgia signals the understanding of the active participation of the patient in the care process and not only based on medical rationality. Although the publication of the National Policy of Integrative and Complementary Practices in SUS was made in 2006 and Lian gong is not a new therapy, both the training of professionals focused on these practices and the scientific basis require investments.

The over-written evaluation methodology for monitoring the patient, however, effective it has been in capturing symptomatic changes, could have been more congruent if it had used instruments that evaluated sleep, fatigue, anguish, anxiety, and depression, which are to whom the painful complaint and the SF-36 [1,4,5] items are to be addressed. In addition to this limitation, it should be taken into consideration that this is a case study and cannot extrapolate the findings to all patients with fibromyalgia. Clinical trials will be more reliable in this response and it is worth noting the need for a placebo group to evaluate the real effects of this therapy, both its evaluation as an isolated form of treatment, as proposed here, although it is commonly described as adjunct. Progress has been made in proposing a placebo form of Lian gong [4].

Conclusion

Lian gong stands out for its adaptability, easy application, low demand for the necessary structure, low cost and the main one, promising results through fibromyalgia. With the organization of health systems to adhere to self-applicable or simple inclusive care, Lian gong seems to successfully meet the purpose of CIPs.

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