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Title: A Standardized Copper Bian-Stone Gua Sha Protocol for Treating Chronic Fatigue Syndrome in Human Subjects

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Author Questionnaire

- 1. Microscopy:** Does your protocol require the use of a dissecting or stereomicroscope for performing a complex dissection, microinjection technique, or something similar? **NO.**
- 2. Software:** Does the part of your protocol being filmed include step-by-step descriptions of software usage? **No.**
- 3. Filming location:** Will the filming need to take place in multiple locations? **No.**
- 4. Testimonials (optional):** Would you be open to filming two short testimonial statements **live during your JoVE shoot**? These will **not appear in your JoVE video** but may be used in JoVE's promotional materials. **No.**

Current Protocol Length

Number of Steps: 23

Number of Shots: 40

Interviews

Videographer: Obtain headshots for all authors available at the filming location.

INTRODUCTION:

~~REQUIRED: Summarize your research focus and the main questions it aims to answer.~~

- 1.1. **Lu Yangqing:** This protocol describes a standardized, step-by-step procedure for performing copper Bian-stone Gua Sha in human subjects diagnosed with chronic fatigue syndrome.
 - 1.1.1. INTERVIEW: Named talent says the statement above in an interview-style shot, looking slightly off-camera

~~Describe the research gap or limitation in existing methods and how this protocol addresses them.~~

- 1.2. **Lu Yangqing:** This protocol offers a non-pharmacological procedural alternative that may avoid certain limitations associated with long-term pharmacotherapy.
 - 1.2.1. INTERVIEW: Named talent says the statement above in an interview-style shot, looking slightly off-camera

CONCLUSION:

~~Describe the most important consideration or challenge when performing this protocol.~~

- 1.3. **Lu Yangqing:** Key considerations during the procedure include accurate acupoint localization, pressure calibration, and safety monitoring to ensure reproducibility and patient safety in clinical research settings.
 - 1.3.1. INTERVIEW: Named talent says the statement above in an interview-style shot, looking slightly off-camera

~~How can future studies build on this work? Describe the questions or research directions that can be investigated next.~~

- 1.4. **Lu Yangqing:** This study may provide a framework for investigating interventions that address both physical and mental dimensions of fatigue-related conditions.

- 1.4.1. INTERVIEW: Named talent says the statement above in an interview-style shot, looking slightly off-camera

Videographer: Obtain headshots for all authors available at the filming location.

Ethics Title Card

This research has been approved by the Ethics Committees of the Fifth Clinical Medical College of Guangzhou University of Chinese Medicine and the Second Traditional Chinese Medicine Hospital of Guangdong

Protocol

Videographer: *Please always record an audio slate while filming each shot mentioned in the shotlist.*

2. Participant Preparation and Treatment Site Inspection

Demonstrator: Lu Yanqing

- 2.1. To begin, explain the procedure, expected sensations, and potential skin changes to the participant with a clinical diagnosis of chronic fatigue syndrome [1]. Confirm that they are not excessively hungry, full, fatigued, or stressed, and schedule the procedure 1 to 2 hours after a meal [2].
 - 2.1.1. WIDE: Talent explaining the procedure to the participant. **Videographer:** *Please obtain CU shot as well for this shot.*
 - 2.1.2. Talent asking questions as when they had the last meal. The participant is answering and then talent looks at the watch and notes the time.
- 2.2. Inspect the treatment site and exclude any areas with ulceration, infection, active dermatitis, open wounds, bleeding, severe bruising, or other unsafe skin findings [1].
 - 2.2.1. Talent showing and pointing to unsafe skin findings such as wounds or ulcers on the participant.
- 2.3. Position the participant in a seated posture with an approximately 15-degree forward lean [1] and place the participant's arms on a padded support [2].
 - 2.3.1. Talent positioning the participant in a seated posture with a slight forward lean.
 - 2.3.2. Talent placing the participant's arms on a padded support.
- 2.4. Expose the posterior trunk region selected for scraping [1] and drape all other areas with a blanket to maintain warmth and privacy [2].
 - 2.4.1. Talent exposing the selected posterior trunk region.
 - 2.4.2. Talent draping the non-treated areas with a blanket.
- 2.5. Determine the acupoint locations according to the national standard of the People's Republic of China, Nomenclature and Location of Meridian Points [1]. Select and measure the Governor Vessel [2] and bilateral Bladder Meridian acupoints using the

finger-cun method and vertebral landmarks [3].

2.5.1. LAB MEDIA: Figure 3 and 4.

2.5.2. Talent pointing to the Governor Vessel point on the participant.

2.5.3. TEXT ON PLAIN BACKGROUND:

Acupoints:

Dazhui (Governing Vessel 14): below the 7th cervical vertebra

Yaoyangguan (Governing Vessel 3): below the 4th lumbar vertebra

Feishu (Bladder 13): below the 3rd thoracic vertebra

Pishu (Bladder 20): below the 11th thoracic vertebra

Weishu (Bladder 21): below the 12th thoracic vertebra

Shenshu (Bladder 23): below the 2nd lumbar vertebra

3. Gua Sha Treatment Procedure

3.1. Using medical forceps, hold a sterile cotton ball [1] and disinfect the skin 3 times from Dazhui to Yaoyangguan and along the bilateral Bladder Meridian lines with 75 percent alcohol [2].

3.1.1. Talent holding a sterile cotton ball with medical forceps.

3.1.2. Talent disinfecting the skin with the sterile cotton ball held in the medical forceps.

3.2. After the skin dries, apply approximately 5 milliliters of Gua Sha oil evenly over the target area [1].

3.2.1. Talent applying the Gua Sha oil evenly over the target area.

3.3. Hold the sterilized copper Bian-stone scraper at a 45-degree angle to the skin surface [1]. Begin at Dazhui [2], and apply the light scraping technique along the spinal midline toward Yaoyangguan at approximately 5 centimeters per second [3].

3.3.1. Talent holding the sterilized copper Bian-stone scraper at a 45-degree angle against the skin.

3.3.2. Talent placing the scraper at Dazhui.

3.3.3. Talent scraping along the spinal midline toward Yaoyangguan Governing Vessel 3.

3.4. Repeat the downward scraping motion 10 times along the Governor Vessel [1].

3.4.1. Talent scraping downward along the Governor Vessel repeatedly.

3.5. Increase pressure briefly to a moderate level at the Dazhui for 30 seconds [1] and then at the Yaoyangguan for 30 seconds [2].

3.5.1. Talent applying the moderate-pressure scraping technique at Dazhui Governing Vessel 14.

3.5.2. Talent applying the moderate-pressure scraping technique at Yaoyangguan Governing Vessel 3.

3.6. Monitor participant discomfort continuously using a 0 to 10 Visual Analog Scale and do not exceed a participant-reported pain score of 4 [1]. Reduce the pressure immediately when the pain score exceeds 4 [2].

3.6.1. Talent asking the participant and noting down the discomfort score on a chart.

3.6.2. Talent reducing the scraping pressure and continuing to scrape.

3.7. Proceed to the bilateral Bladder Meridian lines [1]. Begin at Feishu [2], and scrape downward from Feishu to Shenshu, applying the light scraping technique along the meridian [3].

3.7.1. Talent moving the scraper to the bilateral Bladder Meridian lines.

3.7.2. Talent placing the scraper at Feishu Bladder 13 and pointing to Feishu with another hand.

3.7.3. Talent scraping downward from Feishu Bladder 13 to Shenshu Bladder 23.

3.8. Then, apply moderate pressure for 30 seconds each at Pishu, Weishu, and Shenshu [1].

3.8.1. Talent applying the moderate-pressure scraping technique at Pishu.

3.9. Repeat the scraping sequence 10 times on each side of the spine [1].

3.9.1. Talent repeating the scraping sequence on the other side of the spine.

4. Treatment Completion and Post-Treatment Care

4.1. Continue scraping until uniform petechiae, or sha, appear at a density of 10 to 15

petechiae per square centimeter, or until 10 strokes per segment are completed, whichever occurs first [1] and check the skin to avoid excessive scar formation [2].

4.1.1. Talent continues scraping until the defined endpoint is reached.

4.1.2. Talent checking the treated skin.

4.2. Discontinue scraping once the defined endpoint is reached and limit the total session duration to approximately 20 minutes. Perform the procedure two times per week for 2 consecutive weeks [1].

4.2.1. Talent discontinuing scraping and looking at a timer or clock.

4.3. If the participant develops dizziness, palpitations, cold sweats, nausea, pallor, faintness, chest discomfort, shortness of breath, or another concerning symptom, stop the procedure immediately [1] and position the participant supine on a bed [2].

4.3.1. Participant signaling discomfort and talent stopping the scraping procedure immediately by retracting the scraper.

4.3.2. Talent positioning the participant supine on the bed.

4.4. Assess the airway, breathing, circulation, level of consciousness, and vital signs when an adverse reaction occurs and confirm that oral intake is safe before giving fluids [1].

4.4.1. Talent assessing the participant's vitals by placing a stethoscope to check pulse and an oximeter to check spO2 and noting the values.

4.5. Administer 200 milliliters of warm water containing 10 grams of glucose when the participant is conscious, able to swallow safely, and has no glucose-related contraindication [1].

4.5.1. Talent giving the participant warm water containing glucose.

4.6. After completion, gently wipe the residual oil from the skin with a soft cloth [1] and inspect the treated skin for excessive irritation, bleeding, blistering, or other abnormal findings [2].

4.6.1. Talent wiping the residual oil from the treated skin with a soft cloth.

4.6.2. Talent inspecting the treated skin.

4.7. Advise the participant to keep the scraped area warm, avoid wind exposure for 4 to 6

hours and avoid cold-water exposure for 4 to 6 hours [1].

4.7.1. Talent explaining the participant to keep the scraped area warm and placing a warm blanket over it.

4.8. Finally, document the treatment details, participant response, adverse events, and post-treatment instructions [1]

4.8.1. Talent documenting the treatment details in a chart.

Results

5. Results

5.1. Twenty participants meeting the inclusion criteria completed the intervention protocol [1].

5.1.1. LAB MEDIA: Table 1. *Video editor: Highlight the value 20 in the “Number of Patients” column*

5.2. Uniform light red to purplish petechiae were visible along the Bladder Meridian lines after the treatment [1].

5.2.1. LAB MEDIA: Figure 5. *Video editor: show the 3rd image with light red to purplish marks on the patient’s back*

5.3. After the 2-week protocol, the Fatigue Severity Scale score [1] and the Traditional Chinese Medicine Syndrome Score decreased significantly [2].

5.3.1. LAB MEDIA: Table 1. *Video editor: Highlight the “Post-treatment” values in the “Fatigue Severity Scale” row*

5.3.2. LAB MEDIA: Table 2. *Video editor: Highlight the “Post-treatment” values in the “TCM Syndrome Scores” row*

5.4. The Short Form 36 Health Survey scores changed significantly after the treatment [1].

5.4.1. LAB MEDIA: Table 3. *Video editor: Highlight the “Post-treatment” column*

Pronunciation guides:

1. Chronic

Pronunciation link: <https://www.merriam-webster.com/dictionary/chronic>

IPA: /'krɑːnɪk/

Phonetic Spelling: krah·nik

2. Fatigue

Pronunciation link: <https://www.merriam-webster.com/dictionary/fatigue>

IPA: /fə'tiːg/

Phonetic Spelling: fuh·teeg

3. Syndrome

Pronunciation link: <https://www.merriam-webster.com/dictionary/syndrome>

IPA: /'sɪnˌdroum/

Phonetic Spelling: sin·drohm

4. Ulceration
Pronunciation link: <https://www.merriam-webster.com/dictionary/ulceration>
IPA: /ˌʌlsəˈreɪʃən/
Phonetic Spelling: uhl·suh·ray·shuhn
5. Infection
Pronunciation link: <https://www.merriam-webster.com/dictionary/infection>
IPA: /ɪnˈfekʃən/
Phonetic Spelling: in·fek·shuhn
6. Dermatitis
Pronunciation link: <https://www.merriam-webster.com/dictionary/dermatitis>
IPA: /ˌdɜːməˈtɑɪtɪs/
Phonetic Spelling: dur·muh·ty·tuhs
7. Vertebra
Pronunciation link: <https://www.merriam-webster.com/dictionary/vertebra>
IPA: /ˈvɜːtəbrə/
Phonetic Spelling: vur·tuh·bruh
8. Acupoint
Pronunciation link: <https://www.merriam-webster.com/dictionary/acupoint>
IPA: /ˈækjəˌpɔɪnt/
Phonetic Spelling: ak·yuh·point
9. Nomenclature
Pronunciation link: <https://www.merriam-webster.com/dictionary/nomenclature>
IPA: /noʊˈmenkləˌtʃə/
Phonetic Spelling: noh·men·kluh·chur
10. Meridian
Pronunciation link: <https://www.merriam-webster.com/dictionary/meridian>
IPA: /məˈrɪdiən/
Phonetic Spelling: muh·rid·ee·uhn
11. Dazhui
Pronunciation link: <https://www.howtopronounce.com/dazhui>
IPA: /dɑːˈdʒweɪ/
Phonetic Spelling: dah·jway
12. Yaoyangguan
Pronunciation link: <https://www.howtopronounce.com/yaoyangguan>
IPA: /jɑʊˌjɑːŋˈɡwɑːn/
Phonetic Spelling: yow·yahng·gwahn
13. Feishu
Pronunciation link: <https://www.howtopronounce.com/feishu>
IPA: /ˈfeɪʃuː/
Phonetic Spelling: fay·shoo
14. Pishu
Pronunciation link: <https://www.howtopronounce.com/pishu>

IPA: /'pi:ʃu:/

Phonetic Spelling: pee·shoo

15. Weishu

Pronunciation link: <https://www.howtopronounce.com/weishu>

IPA: /'weɪʃu:/

Phonetic Spelling: way·shoo

16. Shenshu

Pronunciation link: <https://www.howtopronounce.com/shenshu>

IPA: /'ʃɛnʃu:/

Phonetic Spelling: shen·shoo

17. Sterile

Pronunciation link: <https://www.merriam-webster.com/dictionary/sterile>

IPA: /'sterəl/

Phonetic Spelling: ster·uhl

18. Disinfect

Pronunciation link: <https://www.merriam-webster.com/dictionary/disinfect>

IPA: /ˌdɪsɪn'fekt/

Phonetic Spelling: dis·in·fekt

19. Scraper

Pronunciation link: <https://www.merriam-webster.com/dictionary/scraper>

IPA: /'skreɪpər/

Phonetic Spelling: skray·pur

20. Analog

Pronunciation link: <https://www.merriam-webster.com/dictionary/analog>

IPA: /'ænəˌlɔ:g/

Phonetic Spelling: an·uh·log

21. Petechiae

Pronunciation link: <https://www.merriam-webster.com/dictionary/petechiae>

IPA: /pə'ti:ki.i:/

Phonetic Spelling: puh·tee·kee·ee

22. Palpitations

Pronunciation link: <https://www.merriam-webster.com/dictionary/palpitation>

IPA: /ˌpælpə'teɪʃənz/

Phonetic Spelling: pal·puh·tay·shuhnz

23. Nausea

Pronunciation link: <https://www.merriam-webster.com/dictionary/nausea>

IPA: /'nɔ:ziə/, /'nɔ:ʒə/

Phonetic Spelling: naw·zee·uh; nah·zhuh

24. Pallor

Pronunciation link: <https://www.merriam-webster.com/dictionary/pallor>

IPA: /'pælər/

Phonetic Spelling: pal·ur

25. Supine
Pronunciation link: <https://www.merriam-webster.com/dictionary/supine>
IPA: /su:'paɪn/
Phonetic Spelling: soo·pyne
26. Airway
Pronunciation link: <https://www.merriam-webster.com/dictionary/airway>
IPA: /'er,weɪ/
Phonetic Spelling: air·way
27. Circulation
Pronunciation link: <https://www.merriam-webster.com/dictionary/circulation>
IPA: /,sɜ:kjə'leɪʃən/
Phonetic Spelling: sur·kyuh·lay·shuhn
28. Consciousness
Pronunciation link: <https://www.merriam-webster.com/dictionary/consciousness>
IPA: /'kɑ:nʃəsnəs/
Phonetic Spelling: kahn·shuhs·nuhs
29. Contraindication
Pronunciation link: <https://www.merriam-webster.com/dictionary/contraindication>
IPA: /,kɑ:ntreɪ'ndə'keɪʃən/
Phonetic Spelling: kon·truh·in·duh·kay·shuhn
30. Irritation
Pronunciation link: <https://www.merriam-webster.com/dictionary/irritation>
IPA: /,ɪrə'teɪʃən/
Phonetic Spelling: ir·uh·tay·shuhn
31. Blistering
Pronunciation link: <https://www.merriam-webster.com/dictionary/blistering>
IPA: /'blɪstərɪŋ/
Phonetic Spelling: blis·tur·ing
32. Intervention
Pronunciation link: <https://www.merriam-webster.com/dictionary/intervention>
IPA: /,ɪntər'venʃən/
Phonetic Spelling: in·tur·ven·shuhn