



Case Report

## The Risk of Applying Moving Cupping Therapy to A Patient with Chronic Lumbar Pain Previously Treated with Gold Thread Therapy



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### ABSTRACT

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Gold thread therapy (GTT) continuously stimulates acupoints and is used to treat chronic conditions/diseases such as chronic lumbar pain. During the procedure gold thread is embedded into the skin and although gold thread is medically pure, GTT is an irreversible treatment where there is limited evidence on its safety. Here, we report a case of a 79-year-old woman being treated for low back pain who developed side effects following moving cupping therapy at a site of GTT (performed in the 1970s). Adverse reactions causing radiating pain persisted more than at least 9 days following moving cupping therapy. The symptoms of pain were evaluated using the numerical rating scale, and changes in tenderness and the state of bruising was recorded. Low back pain improved but the radiating low leg pain did not improve. This case highlights the need for caution when performing moving cupping therapy where GTT has been previously performed.

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### Introduction

Gold thread therapy (GTT) is a method in which a gold thread is inserted into the body using a gold thread injector (Fig. 1). It was performed as a folk remedy in the 1960s.

In the past, the gold threads used in GTT were 0.5 cm (maximum 0.6 cm) in length and were not injected into large vessels, ligaments, or deep parts of the body. A straight gold thread form was maintained, and 20 to 50 gold threads were injected [1]. However, the number of practitioners performing GTT (with insufficient understanding of the precautions) has increased and the previous methods have not been adhered to. Thus, many patients who have recently undergone GTT experience side effects such as skin granuloma and redness [2-7]. The concern about secondary risks

such as infection caused by the gold threads and vessel damage caused by the indiscriminate use of injection has increased [8,9]. GTT can aid medical treatment when used correctly. It has been reported that GTT is therapeutic for Crow's feet in plastic reconstruction surgery [10] and has been reported to be effective for female sexual dysfunction and vaginal laxity in obstetrics and gynecology [11].

Some patients with lumbar back pain choose Korean medicine treatment, whilst others undergo GTT at illegal private clinics. A history of GTT can be determined through patient statements and simple imaging tests, such as X-rays [2]. Caution is required during GTT treatment in the event that a patient has failed to report their history of GTT as they believe that GTT can affect their current treatment.

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Fig. 1. Gold thread and needle used for gold thread injection.

Moving cupping therapy, a type of cupping therapy, uses negative pressure and movement across subcutaneous layers of skin and the muscle beneath. The application of this therapy may cause tissue damage if foreign substances are present within the subcutaneous skin and muscle [3]. Therefore, before considering a treatment, Korean medicine doctors should bear in mind the risk of secondary damage in areas where gold thread injection has been performed. However, there is a lack of research into secondary risks of treatments following GTT and potential side effects [2]. We report a case of a patient who was at secondary risk after cupping therapy due to unreported previous history of GTT in the same area that cupping was performed.

## Case Report

### Patient

Kim o o /F/79

### Ethical consideration

A patient with chronic lumbar pain, previously treated with GTT in the 1970s, was included in this retrospective study. Informed consent was obtained from the patient for the publication of photographs and information from their medical records. This study was approved by the Institutional Review Board of Pusan National University Korean medical hospital (PNUKHIRB no.: 2022-05-005).

### Chief complaints

Low back pain on the right and radiating pain on the right.

### Onset

Chronic.

### Present illness

The patient presented with low back pain which improved and worsened repeatedly. The patient's history of low back pain began over 5 decades ago. In the 1970s, the patient had GTT where gold threads were injected into the lumbar region.

In 2009, she visited a local orthopedic hospital for a suspected sprain in her lower back. Magnetic resonance imaging was performed on her spine and the patient was diagnosed with a herniated disc at

L4/5. Based on the results of lumbar spine radiography the patient underwent a discectomy.

In 2012, the patient's condition worsened, and she visited the hospital where she received nerve block intervention. However, the patient's condition showed no improvement.

In 2015, the patient experienced low back pain whilst picking up her luggage. She visited hospital where lumbar spine radiography and magnetic resonance imaging was performed and the patient was diagnosed with spinal stenosis at L1-3. A laminectomy was performed. However, the low back pain did not reduce following this procedure.

In 2021, on December 15th, the patient was admitted with low back pain to Pusan National University Korean Medicine Hospital for medical intervention.

### Past medicine history

Osteoarthritis in the hands  
Hypertension

### Simple radiography images

#. 2021-12-15 L-spine X-ray  
s/p Posterior decompression at L1-5  
Severe degenerative scoliosis of L-spine

#. 2022-01-12 Pelvis/Tibia/Femur/Ankle X-ray  
Within normal limits (Figs. 2 and 3).

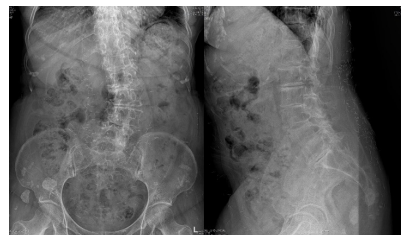


Fig. 2. Lumbar spine X-ray scan.

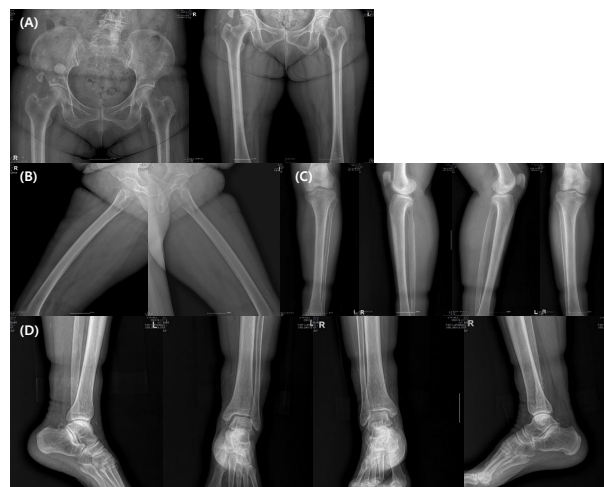


Fig. 3. X-ray scan of the leg. (A) pelvis; (B) femur; (C) tibia; and (D) ankle.

## Treatment methods

### Acupuncture

Acupuncture was performed using sterile 0.3 × 60 mm, 0.4 × 40 mm, and 0.5 × 50 mm stainless steel needles (Dongbang medical, Seongnam, Korea) twice a day for 10 minutes during the hospitalization period of 31 days. EX-B2 acupoints (low back) were needed to relieve the pain (Table 1).

### Herbal medicine

Dokwhal-sokdan-tang (Table 2).

### Moving cupping therapy

On January 5, 2022 moving cupping was performed using cups (Dongbang medical, Seongnam, Korea) with light suction for 10 minutes on the bladder channels (BL 40, BL 50–55).

## Evaluation

To measure the severity of pain the numerical rating scale (NRS) was used where a score of 0 indicated no pain and 10 indicated unbearable pain.

## Case findings

The patient mentioned having undergone GTT in the lumbar region but failed, during the assessments prior to the treatment for low back pain, to disclose that she had received GTT in her calves. The known areas where GTT had been performed were carefully avoided by the practitioners whilst conducting the moving cupping therapy.

Normally, reactions to moving cupping (e.g., redness, slight tenderness, and pain) disappear within 3 days following the procedure. However, it was observed that the patient had bruises (versus redness), severe tenderness, and pain in her calves that had not subsided 6 days after the moving cupping therapy (Table 3).

Doubting whether the side effects were caused by moving cupping therapy, the Korean medicine doctors asked the patient again about her history of receiving GTT. The elderly patient recalled that she had also received GTT in her both lower leg in the 1970s.

Diagnostic radiology, at a local medical center, was requested for the pelvis, femur, tibia, and ankle (Figs. 2 and 3). During treatment at Pusan National University Korean Medicine Hospital, observations were noted and the lesion in her calves at moving cupping site was treated daily, but the patient was discharged

Table 1. Standard for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA).

Item	Detail	
1. Acupuncture rationale	1a) Style of acupuncture	Traditional Korean acupuncture
	1b) Reasoning for treatment provided	Literature and clinical experience of experts.
2. Details of needling	2a) Number of needle insertions per subject per session	From 20 to 40
	2b) Name of points used	Huatuojiaji (EX B2) Points(low back)
	2c) depth of insertion	35–40 mm
	2d) Response sought	Acupuncture sensation “De qi”
	2e) Needle stimulation	Manual stimulation
	2f) Needle retention time	At once
	2g) Needle type	Sterile 0.3 × 60 mm, 0.4 × 40 mm, and 0.5 × 50 mm stainless needles (Dongbang medical, Seongnam, Korea)
3. Treatment regimen	3a) Number of treatment sessions	62
	3b) Frequency and duration of treatment sessions	Twice a day for 10 min (31 d)
4. Other components of treatment	4a) Details of other interventions administered to the acupuncture group (e.g., moxibustion, cupping, herbs, exercises, lifestyle advice)	Herbal medicine, Cupping therapy
	4b) Setting and context of treatment, including instructions to practitioners, and information and explanations to patients	Procedure of treatments
5. Practitioner background	5a) Description of participating acupuncturists (qualification of professional affiliation, years in acupuncture practice, other relevant experience)	Korean medicine doctor of Acupuncture and Moxibustion department with more than 6 months of experience
6. Control or comparator interventions	6a) Rationale for the control or comparator in the context of the research question, with sources that justify this choice	No control or comparator interventions
	6b) Precise description of the control or comparator. If sham acupuncture or any other type of acupuncture-like control is used, provide details as for items 1 to 3 above	No control or comparator interventions

Table 2. Herbal Medicine.

Herbal prescription	Herbal medicine components	Administered	Daily dose
Dokwhal-sokdan-tang	Araliae Cordatae Radix 6g Angelicae Koreanae Radix 6g Angelicae Gigantis Radix 6g Paeoniae Radix 6g Phlomis Radix 4g Rehmanniae Radix Preparata 4g Cnidium Rhizome 4g Hoelen 4g Achyranthis Radix 4g Eucommiae Cortex 4g Gentianae Macrophyllae Radix 4g Asiasari Radix 4g Ledebouriellae Radix 4g Cinnamomi Cortex Spissus 4g Glycyrrhizae Radix 2g Lonicerae Flos 12g Forsythiae Frucus 12g Astragali Radix 6g Salviae Radix 6g Clematidis Radix 6g Cervi Parvum Cornu 3g	Day1-Day31	Extract of 120mL, 2×/d

Table 3. Changes in Tenderness.

	Onset (1/6)	Day1	Day2	Day3	Day4	Day5	Day6	Day7	Day8 (1/14)
Tenderness	+	mild	mild	mild	mild	mild	mild	mild	mild

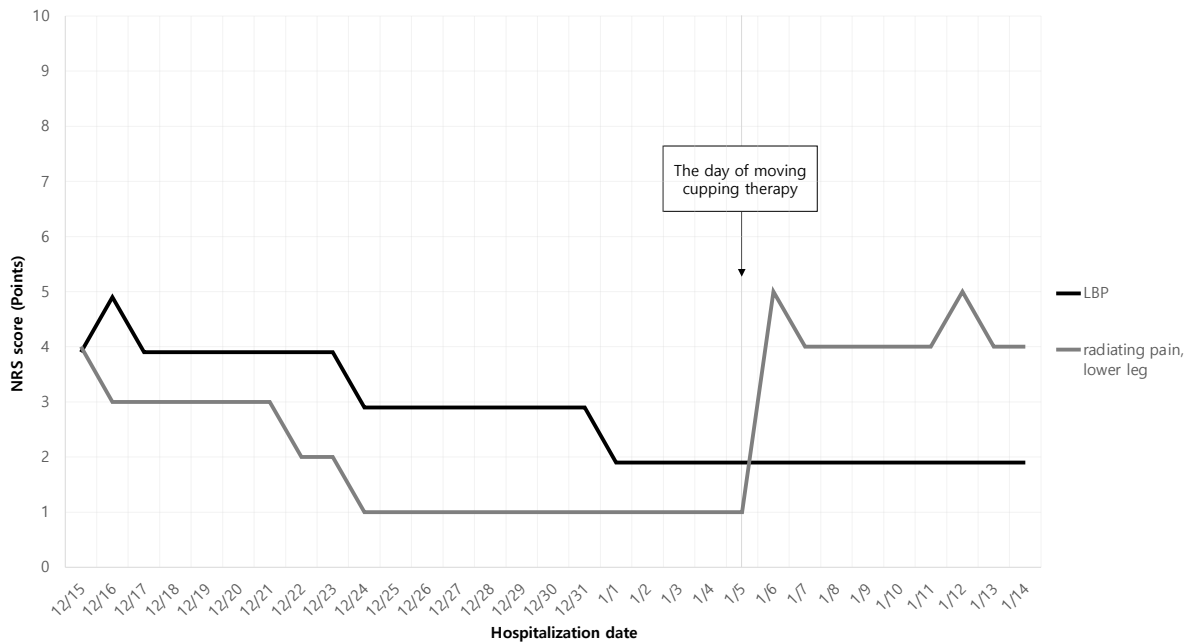


Fig 4. Numerical rating scale changes during the hospitalization period.

without a complete cure.

The NRS score for low back pain reduced from 4 to 2 at discharge. The NRS score for lower leg radiating pain reduced from 4 at the time of hospitalization to 1 on the 24th December but the lower leg pain increased to 5 following moving cupping therapy on the 5th January. A similar degree of pain (4 to 5 points) continued for at least 9 days (Fig. 4). Following moving cupping therapy bruise formation and tenderness were still observed in the lower leg until discharge.

Medical procedures such as cupping therapy, thermal therapy, and electrical therapies in patients who have undergone GTT are high risk. The location of the injected gold thread cannot be confirmed visually. It should be noted that moving cupping therapy may irreversibly change the shape and location of the gold thread as the cup rubs against the skin and muscle under negative pressure, and this may lead to muscle damage. The continued tenderness and bruising observed in the patient in this case indicates the risk of bleeding, hematoma formation, and secondary infection if external pressure is applied where GTT has been previously performed.

## Discussion

GTT, similar to embedding therapy and thread lifting, can be an effective treatment [2], however, it is an irreversible therapy which may be unsafe. Therefore, caution should be exercised while performing GTT. Furthermore, GTT is practiced illegally in private clinics where infection arising from GTT also needs to be considered [4-7].

Some Korean medicine treatments, such as cupping therapy, and thermotherapy affect the gold threads that are injected during GTT. However, data on physical reactions and side effects caused by GTT are insufficient [2].

Cupping therapy has been used effectively in Korean medicine to treat muscle stiffness and blood stasis (which is expressed as static blood and phlegm) and can be classified into flash cupping, stationary cupping, and moving cupping [2].

Recently, practitioners at Pusan National University Korean Medicine Hospital have begun to use moving cupping therapy to reduce radiating pain, especially in the lower leg. The normal reaction to moving cupping therapy involves redness, tenderness, and pain for approximately 3 days after the procedure, after which the symptoms disappear [3].

In this case, although the practitioner had appraised the procedure with the patient several times prior to the treatment, a full history of GTT was not given by the elderly patient and led to the Korean medicine doctor performing moving cupping therapy on the site where gold threads had previously been injected.

Severe bruising, tenderness, and pain lasted at least six days beyond the expected reaction period (1-3 days) for moving cupping therapy. Considering the continuous pain that the patient experienced, and the patient's bruise on her calf, which was similar to a patient with hematoma (Fig. 5), was suggestive of bleeding within the muscle. In addition, the radiating pain and tenderness following moving cupping therapy did not show much improvement, except for a slight reduction in NRS score from 5 to 4 at discharge (nine days after treatment).



Fig. 5. Bruises observed 6 days following treatment.

Moving cupping therapy performed in the vicinity of where patients received GTT are more susceptible to secondary risks and musculoskeletal issues as a result of negative pressure, and these risks are unpredictable. In addition, since the symptoms that occur following moving cupping therapy are similar to hematomas, the risk is greater in patients receiving thrombolytic drugs. It is believed that all Korean medicine treatments that apply pressure, such as interferential current therapy, dry cupping, and moving cupping therapy, should be avoided in such patients.

Recently, the Korean traditional medicine community has reported various side effects of GTT in patients with crow's feet [10], female sexual dysfunction and vaginal laxity [11] and patients wanting facial rejuvenation [7] who received GTT, and warned of the risk of secondary infection and intense pain after undergoing GTT in patients.

In the Acupuncture and Moxibustion Medicine textbook [12], GTT is described as being an effective treatment for chronic conditions/diseases. However, it is advised that GTT is used carefully because problems may arise due to the injected gold thread which remains in the body [12]. There is a scarcity of research/reporting on the safety of GTT even though it is an irreversible treatment. In reporting this case, the hope is that similar incidents will be prevented in patients who have received GTT.

## Author Contributions

Conceptualization: IBR, YGY, KES and KYH. Methodology: OYN and KYH. Formal investigation: OYH, KYH and KJH. Data analysis: OYH, KYH and KJH. Writing original draft: KYH. Writing - review and editing: IBR, OYH, KYH and KJH.

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## Conflicts of Interest

The authors have no conflicts of interest to declare.

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None.

## Ethical Statement

This research did not involve any human or animal experiments

## Patient Consent

This article was written with the patient's written informed consent covering the use of clinical data, test records, and for the purpose of publication.

## References

- [1] Yootaeo. Gold thread acupuncture, 4th ed. Seoul (Korea): Yin and Yang Mac Jin Publishing Co. Ltd.;1983. p. 1-107.
- [2] Jo DH, Baatarkhuyag A, Jo YE, Lee JD. A Review of Research Trends in Gold Implantation Therapy Focused on Gold Thread, Gold Needle and Gold Bead. *J Acupunct Res* 2016;33:79-93.
- [3] Chirali IZ. Traditional Chinese Medicine Cupping Therapy (a translated version). Seoul (Korea): Hanmi book; 2021. p. 1-381.
- [4] Kang HJ, Choi IH, Park CJ, Lee KH. Recurrent Cellulitis Associated with Acupuncture with Migratory Gold Threads. *Ann Dermatol* 2021;33:281-283.
- [5] Yook H, Kim YH, Han JH, Lee JH, Park YM, Bang CH. A case of foreign body granuloma developing after gold thread acupuncture. *Indian J Dermatol Venereol Leprol* 2022;88:222-224.
- [6] Ji JH, Park HY, Lee Y, Lee S, Hong SP, Ahn SK. A Case of Pseudolymphoma which Developed after Gold Acupuncture. *Korean J Dermatol* 2009;47:1083-1086.
- [7] Park KY, Jang WS, Kim IS, Ko EJ, Seo SJ, Hong CK. Multiple Epidermal Cysts as a Complication of Gold Acupuncture. *Ann Dermatol* 2014;26:405-406.
- [8] Joo YB, Park KS. Gold Thread Acupuncture for Rheumatoid Arthritis. *N Engl J Med* 2017;377:e27.
- [9] Yoo H, Yoo W. Acupuncture with Gold Thread for Osteoarthritis of the Knee. *N Engl J Med* 2013;369:e37.
- [10] Shin KC, Bae TH, Kim WS, Kim HK. Usefulness of Gold Thread Implantation for Crow's Feet. *Arch Plast Surg* 2012;39:42-45.
- [11] Kim SM, Won YS, Kim SK. Gold Thread Implantation for Female Sexual Dysfunction and Vaginal Laxity: A Preliminary Investigation. *J Menopausal Med* 2020;26:130-134.
- [12] Korean Acupuncture and Moxibustion Society Textbook Compilation Committee. *Acupuncture medicine*, 4th ed. Seoul (Korea): Hanmi Medicine Publish Company; 2016. p. 203-204.