

Role of *Raktamokshana* by *Ghati Yantra* in treatment of *Gridhrasi* (sciatica): A pilot study

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Abstract

Introduction: The incidence rate of *Gridhrasi* (sciatica) is quite significant as more than three-quarters of the world's population are affected by the disease. It is characterized by the onset of *Ruja* (pain), *Toda* (pricking), and *Stambha* (stiffness), initially in *Sphika* (gluteal region) and then radiating distally to *Kati-Prishtha* (low back), *Janu* (knee), *Jangha* (thigh) till *Pada* (feet). The patients suffering from *Gridhrasi* have restricted movements due to painful limb, affecting the daily routine activities. **Aim:** To assess the role of *Raktamokshana* (blood letting) done by *Ghatiantra* in the patients suffering from *Gridhrasi*. **Materials and Methods:** The study was conducted on twenty patients who had reported for the treatment of *Gridhrasi* at an Ayurvedic hospital. *Raktamokshana* was done on *Sphik* (gluteal region) or *Kati* (low back) region with the help of 18 no. needle and *Ghatiantra* (*Kanchapatra*) in four settings (0, 5th, 10th and 15th day). The sign and symptoms, namely *Ruka*, *Toda*, *Stambha*, and *Spandana* (fasciculation) were given scores depending on their severity. The patients were also assessed for straight-leg raise (SLR) test. Follow-up was done at an interval of 5 days for three times and the scores were noted down before and after treatment. The scores were analyzed by SPSS 18 software using Student's *t*-test. **Results:** Marked reduction in severity of mean scores of *Ruja*, *Toda*, *Stambha*, and *Spandana* was seen in the patients after the use of *Ghatiantra* for *Raktamokshana*, which was statistically significant. **Conclusions:** *Ghatiantra* is the simple and effective treatment (in adjunct to other treatment) for reducing *Ruka*, *Toda*, *Stambha*, and *Spandana* in *Gridhrasi*.

Keywords: *Ghatiantra*, *Gridhrasi*, sciatica, straight-leg raise (SLR) test

Introduction

The word *Gridhrasi* suggests the abnormal gait of patient similar to vulture. It affects the ambulatory function of the patient.^[1] The people who are suffering from *Gridhrasi* cannot stand or sit properly due to painful limb continuously drawing his/her attention. This pain can also be compared with the pain experienced by the prey of vulture while being eaten up posing a serious threat to the quality of life, especially for those who are working. A similar condition in the modern science is sciatic syndrome or sciatica.^[1] The incidence rate of this disease is significant as more than three-quarters of the world's population experiences lower back pain at some or other time during their course of life and it is the most common cause of sickness which results in the absence from work. It is also a major cause of illness among the working population in a developing country like India. Lack of job satisfaction, depression, obesity, smoking, alcohol, and socioeconomic deprivation have also been found responsible for it.^[2]

Sciatica is characterized by severe pain radiating from lower back to the leg caused by compression, irritation, or inflammation of the sciatic nerve. The main cause behind the irritation of sciatic nerve is a degenerative pathology of intervertebral disc such as bulging, desiccation, prolapse of the intervertebral disc, reduction in the intervertebral space and sacralization of vertebra and spinal canal stenosis.

In Ayurveda, *Gridhrasi* is described as one of the *Vatavyadhi*. It is characterized with the onset of *Ruja* (pain), *Toda* (pricking), and *Stambha* (stiffness), initially in *Sphika* (gluteal region) and then radiating distally to *Kati-Prishtha* (low back), *Janu* (knee), *Jangha* (thigh) till *Pada* (feet).^[3,4]

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The line of management includes *Basti Chikitsa*, *Agnikarma*, and *Siravyadha*. As *Vata* involvement is evident with or without *Kapha* due to pain and disability, *Snehana* (oleation) and *Swedana* (fomentation) *Chikitsa* are also advised as a treatment.^[5,6] However, in *Gridhrasi*, as *Snayu* and *Rakta* are involved, *Agnikarma* and *Siravyadha* (venepuncture) are also the choice of treatment.^[7] The role of simple, safe, economical, and practicable Ayurvedic procedures such as *Siravyadha* has been studied less in the management of *Vatavyadhi* such as *Gridhrasi*. Acharya Sushruta has also mentioned that diseases those are not relieved effectively by *Snehana*, *Lepanadi* therapeutic measures, *Siravyadha* is a management to achieve better and earlier results.^[8] *Raktamokshana* (blood-letting) by *Siravyadha* is considered to be the supreme as it drains out the vitiated *Rakta* and cures the disease.^[9]

In the present study, patients having symptoms of *Gridhrasi* were treated by *Raktamokshana* using a specific bell-like glass instrument called *Ghatyantra*.

Materials and methods

The study was conducted on the patients who reported in the outpatient department and inpatient department for the treatment of *Gridhrasi* (sciatica) at a private Ayurvedic hospital. For the present study, *Ghatyantra* - which is a medium sized glass jar (with one end open), a kind of cupping instrument used in Unani medicine was used. It is smooth and it can be placed easily on the affected body part. Other materials used for the procedure were spirit, sterilized gauze piece pad, match box, needles and forceps [Figure 1].

Total twenty patients of both sexes in the age group of 30-60 years were selected for the study for a period of one year. The patients were advised not to take any pain killers during the study period and were allowed to take essential medications for diabetes and blood pressure etc., A detailed history of the selected patients was taken, along with the duly signed informed consents.

Inclusion criteria

1. Patients with classical features of *Gridhrasi*, namely, pain over the *Sphik* (gluteal region), *Kati Prushtha* (back), *Uru*



Figure 1: Materials used

(thigh), *Janu* (knee), *Jangha* (calf region), extending up to *Pada* (foot) which is associated with *Stambha* (stiffness), *Toda* (pricking pain), tingling and numbness of limbs, difficulty in walking, were included in the study

2. Patients with positive straight-leg raise (SLR) test.

Exclusion criteria

1. Cases of spondylolisthesis, sacroiliac arthritis, herpes simplex infection causing radiating pain
2. Tuberculoma, or any cyst compressing the nerve root, diabetic neuropathies were excluded from the study.

Procedure

Purva Karma (preoperative procedure)

Before commencing the procedure, SLR test of the patients was done. For this, patients were asked to lie down in supine position on examination table and raise their legs straight and the angle was measured.

The patients were advised to take *Yavagu* of rice (a rice:water in the ratio of 1:6 was cooked to form a semisolid paste) before coming to procedure. The patient was advised to lie in the prone position. Then, the patient was asked to point the highly affected area on *Sphika* or *Kati-Prishtha* by fingers. Then the site of blood-letting was selected and disinfected with povidine – iodine solution.

Pradhana Karma (main procedure)

On selected and disinfected area 3–4 pricks were given with the help of 18 number needle which leads to pinpoint bleeding [Figure 2]. Then, the *Ghatyantra* was wiped from inside with spirit gauze [Figure 3] and heated with matchstick [Figure 4], which was then quickly placed on the bleeding points [Figures 5 and 6]. As the *Ghatyantra* was flamed inside, it creates a vacuum because of the consumption of oxygen by the flame which raises the local area to form a bulge and oozing of the blood occurs [Figure 7]. It was kept in the same position till the blood flow stops and blood clots, after which *Ghatyantra* was removed [Figure 8] and the area was cleaned with sterile gauze piece.



Figure 2: Pricking by needle



Figure 3: Coating *Ghatyantra* with spirit



Figure 4: *Agni Prajwalana* (heating with matchstick)



Figure 5: Keeping *Ghatyantra* on affected area



Figure 6: *Ghatyantra* in place



Figure 7: Oozing of the blood



Figure 8: Removal of *Ghatyantra*

Paschata Karma (postoperative procedure)

The removed *Ghatyantra* left a ring shaped mark on the affected area [Figure 9] which was massaged by soft hand [Figure 10] and the patient was asked to take rest.

The patient was recalled for follow-up for three times at an interval of 5 days. Patients were also observed for any improvement in SLR test after the use of *Ghatyantra*, during the follow-up visits.



Figure 9: Ring mark on the area of application of *Ghatiyatra*

Assessment criteria

Subjective symptoms presented by the patients were given score and were assessed before and after performing of *Raktamokshana* by *Ghatiyatra*. In objective parameters SLR test was done and angle with the help of protractor was noted for comparison.

Gradation for Subjective parameters

Ruja (pain)

- 0: No pain
- 1: Painful, walks without limping
- 2: Painful walks with limping but without support
- 3: Painful can walk only with support
- 4: Painful unable to walk.

Stambha (stiffness)

- 0: No stiffness
- 1: Mild stiffness
- 2: Moderate stiffness
- 3: Severe stiffness
- 4: Very severe stiffness.

Toda (pricking type of pain)

- 0: No pricking sensation
- 1: Mild pricking sensation
- 2: Moderate pricking sensation
- 3: Severe pricking sensation.

Spandana (fasciculation)

- 0: No fasciculation
- 1: Mild fasciculation
- 2: Moderate fasciculation
- 3: Severe fasciculation.

Statistical analysis

The statistical analysis was done by applying paired *t*-test using SPSS version 18 software (IBM Corporation, Armonk, New York, U.S.).



Figure 10: Massage with soft hand

Results

In case of the symptom *Ruja*, it was observed that after the use of *Ghatiyatra*, eight patients out of 20 (40%) got 100% relief with reduction of intensity from score 4 to 0, and in remaining patients, 50–90% reduction in pain was seen. The mean score before treatment was 2.55, while after treatment, the mean score was 0.75 which was statistically significant with $p < 0.001$ [Table 1].

In case of *Toda*, 14 patients out of 20 patients (70%) the score reduced from 3 to 0 (100%), and in remaining patients, 70–90% reduction was seen. The mean score before and after treatment was found to be 2.35 and 0.35 respectively which was statistically significant [Table 1].

In case of *Stambha*, 6 patients out of 20 (30%) have got reduction in score from 4 to 0 (100%), and in remaining patients, 60–80% improvement was seen. The mean score of *Stambha* was 2.35 before treatment and 0.75 after treatment which was statistically significant [Table 1].

Similarly, in case of the symptom *Spandana*, it was seen that after the use of *Ghatiyatra*, 14 patients out of 20 (70%) got 100% relief with score reducing from 3 to 0, and in remaining patients, 60–90% relief was seen. The mean score before treatment was 1.55 which was observed to decline to 0.30 with $p < 0.001$ which was statistically highly significant [Table 1].

After the use of *Ghatiyatra*, the SLR test shows improvement up to 25% in first 5 days, 40% in 10 days, and 80–90% at the end of 15 days. The mean value for SLR test was found to be 36.25° before treatment which has increased to 80° with statistically high significance [Table 1].

Discussion

Referring to previous study^[9], in *Gridhrasi*, the main affected area was *Sphik*, i.e., gluteal region and *Kati*, i.e., lumbar spine and there is often a history of trauma as twisting of the spine, lifting heavy objects, or exposure to cold; similar findings were also seen in the present study.

Table 1: Effect of *Raktamokshana* by *Ghatyantra* on sign and symptoms of *Gridhrasi* (sciatica)

Sign and symptom	Mean score		SD (\pm)	SE (\pm)	t	P
	BT	AT				
<i>Ruja</i> (pain)	2.55	0.75	0.616	0.138	13.07	<0.0001
<i>Toda</i> (pricking pain)	2.35	0.35	0.649	0.145	13.78	<0.0001
<i>Stambha</i> (stiffness)	2.35	0.75	0.821	0.184	8.71	<0.0001
<i>Spandana</i> (fasciculation)	1.55	0.30	0.910	0.204	6.14	<0.0001
SLR	36.25	80	11.107	2.438	17.61	<0.0001

SD: Standard deviation, SE: Standard error, SLR: Straight-leg raise, AT: After treatment, BT: Before treatment

Acharya Charaka has described *Siravyadha*, *Basti Karma* and *Agnikarma* in the management of *Gridhrasi*. Acharya Sushruta has mentioned that diseases, which are not relieved by *Snehana*, *Lepanadi* therapeutic measures can be treated with *Siravyadha* as an emergency management. *Siravyadha* is also accepted as half of the therapeutic measure in *Shalya Tantra* like *Basti* in *Kayachikitsa*. In *Panchakarma Chikitsa*, the vitiated. *Doshas* are purified whereas in *Siravyadha* vitiated *Rakta Dhatu* is removed.

The susceptibility of *Rakta* towards impurity is so versatile that the classics were compelled to agree upon *Rakta* as fourth *Dosha*. *Dushita* (vitiating) *Rakta* from the related *Siras* (veins) should be let out to protect the health or to remove the disease. The symptoms and *Samyaka Siravedha* are *Laghavam* (body and painful area) and *Vedanashanti* (pain reduction), bleeding stop itself, it means the pain arising from a disease condition get subsided followed by decrease in the symptoms of the disease so *Siravedha* can be used in pain predominant diseases.^[10-12]

In previous studies,^[4,7] researchers used *Siravyadha* to let out *Rakta Dhatu* along with vitiated *Doshas* and reported that *Siravyadha* gives spontaneous relief in the cardinal symptoms of *Gridhrasi* due to release of impurities or *Doshas* from the affected area. Similarly in the present study vitiated *Doshas* along with *Rakta Dhatu* was let out by pricking with needle on affected area, The vacuum created by the *Ghatyantra* helps the vitiated blood to ooze out. which gives spontaneous relief from symptoms of *Gridhrasi* due to release of *Doshas* with the blood from the body.

Conclusions

After using *Ghatyantra* as a treatment modality in patients with *Gridhrasi*, it can be concluded that the use of *Ghatyantra* imparts measurable reduction in the intensity of *Ruja*, *Toda*, *Spandana*, and *Stambha* which are the major symptoms of *Gridhrasi*. *Ghatyantra* is the simple and effective treatment (in adjunct to other treatment) for *Gridhrasi*.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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हिन्दी सारांश

गृध्रसी से पीड़ित रोगियों के उपचार में घटीयंत्र द्वारा रक्तमोक्षण की भूमिका

मीनाक्षी कुंभारे पाटिल, धनराज बी गहूकर, स्वप्निल एन पाटिल

गृध्रसी रोग की घटनाओं की दर में जो वृद्धि हुई है वह काफी आश्चर्यजनक है क्योंकि विश्व की आबादी के तीन-चौथाई से अधिक लोग इस रोग से प्रभावित होते हैं। इस रोग में स्फिक में रुजा, तोद और स्तम्भ की शुरुआत होती है और फिर कटि, जानु, जंघा से पाद तक यह वेदना होती है। गृध्रसी से पीड़ित रोगी भयंकर दर्द के कारण उसकी गति प्रभावित होती है और इससे उसकी दिनचर्या भी प्रभावित होती है। प्रस्तुत शोध का उद्देश्य गृध्रसी से पीड़ित रोगियों में घटीयंत्र द्वारा रक्तमोक्षण से प्राप्त लाभ का आंकलन करना था। इस अध्ययन हेतु गृध्रसी से पीड़ित बीस रोगियों को एक आयुर्वेदिक अस्पताल से चुना गया जिनके स्फिक प्रदेश पर अथवा कटि प्रदेश पर १८ नंबर की सुई की सहायता से और घटीयंत्र के प्रयोग से चार बैठकों में (०, ५, १० और १५ दिनों पर) रक्तमोक्षण किया गया। रुजा, तोद, स्तम्भ तथा एस एल आर में सुधार के आधार पर चिकित्सा के परिणामों को दर्शाया गया। स्कोर का विश्लेषण एस पी एस एस १८ सॉफ्टवेयर में टी-टेस्ट के माध्यम से किया गया। परिणाम से ज्ञात हुआ कि घटीयंत्र के उपयोग के बाद रोगियों में रुजा, तोद, स्तम्भ और स्पंदन की गंभीरता के औसत स्कोर में कमी हुई जो सांख्यिकीय रूप से सार्थक थी। इस प्रकार यह निष्कर्ष निकलता है कि घटीयंत्र द्वारा किया गया रक्तमोक्षण गृध्रसी से पीड़ित रोगियों के लिए प्रभावी चिकित्सा है।