



**“A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFICACY OF AGNIKARMA WITH GODANTA IN THE MANAGEMENT OF GRIDHRASI W.S.R. TO SCIATICA”**

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**Abstract:** The disorders affecting the Locomotory System are increased in present era, in these diseases Sciatica is considered one among them. No satisfactory conservative management is available in the contemporary science for this, except Analgesics and Steroids. In Ayurveda Gridhrasi [Sciatica] is one of the Rujapradhaana Vatavyadhi. The special feature of Gridhrasi is sakthinikshepana nigraha [restricted lifting of leg], Ruk, Toda, Stambha, and Spandana starts from sphik pradesha and radiates towards the Kati, uru , janu , jangha and pada of the affected side of the leg, which hampers the routine having the Cardinal symptom being radiates pain along the course of the Sciatic nerve. Among the Bahya Chikitsa, Agnikarma is commonly practicing procedure. Agnikarma is indicated in Atya ugra-Ruja condition, requires less duration to perform &

gives instant relief. For Agnikarma many Dahanopakarnas are explained like Pippali, Ajashakrut, Godanta, Shara, Shalaka, Jambovastha, Madhu, Gritha and different metals. So here is an attempt to study the efficacy agnikarma with two different dahanopakarana in the treatment of Gridhrasi. Hence to perform Agnikarma procedure with Godanta is taken up for this study and by comparing it with the established study of Agnikarma with Panchaloha Shalaka which has got 80% result as per previous studies.

**Key words:** Gridhrasi, Sciatica, Agnikarma, Godanta, Panchaloha Shalaka.



## Introduction:

Each and every human being desire to live happy & comfortable life, but in today's fast & sedentary life style, inspite of all the good habits, food, adequate exercise & healthy measures people become victim of low back ache at one or other point of time in their life. Low back pain is the major cause of morbidity throughout the world affecting mainly the young adults. Life time of incidence of low back pain is said to be 50% -70%.<sup>1</sup>

In modern science Sciatica can be defined as a painful musculoskeletal disorder which begins in the lumbar region (L4 to S3) & radiates either to one limb or both the limb along the Postero - Lateral aspect i.e. along the course of Sciatic Nerve<sup>2</sup>. The corresponding annual incidence of an episode of sciatica range from 1% to 5%<sup>3</sup>. The management of Sciatica includes various modalities such as conservative treatment, Epidural Steroid Injection, Peri-Radicular Infiltration, Surgical treatment. All these treatment modalities have certain drawbacks like Epidural Steroidal Injections therapy, although a safer procedure for majority of patients, it causes loss of movement in lower part of body by damaging nerve fibers temporarily & also causes direct damage to the spinal cord from the epidural needle, leading to epidural space bleeding. In Microdiscectomy there is a recurrence of Disc Herniation in 1% to 20% of the people after the surgery and high chances of Bowel or Bladder incontinence, DVT and pain may persist even after the Surgery. And also all these treatment modalities are not affordable for the poor.

In Ayurveda, Sciatica can be co-related to Gridhrasi which literally means the gait shown by the patient will be just like Ghradhra (vulture) due to extreme pain. It is included one among the 80 types of vataja nanatmaja vyadhi<sup>4</sup> as there is no pain without involvement of vata dosha. Shoola or ruja is one of the characteristic features of vatadosa which can be seen in Gridhrasi. Cardinal features and symptoms of Gridhrasi are Ruk (pain), Toda (pricking sensation), Stambha (stiffness) & Spandana starting from Sphik, Kati, prishtha radiating down to Uru, Janu, Jangha & Pada in order & Sakthinikshepanigraha<sup>5</sup> (restricted lifting of the leg).

Acharaya Charaka has mentioned two types of Gridhrasi, based on doshas i.e. Vataja and Vatakaphaja<sup>6</sup>. Kaphanubandi Gridhrasi shows lakshanas like Aruchi, Gourava, Tandra.

Currently patients prefer invasive & simple conservative treatment relieves pain quickly & efficiently without reoccurrence. In Ayurveda, Gridhrasi can be managed with various procedures which are effective, simple, safe & cost effective. Among them Agnikarma is said to be best for quick pain relief. Acharya Sushruta mentioned different types of Dahanopakarana<sup>7</sup>. According to different researches panchaloha shalaka is considered to be standard one. Metals are the best conductors of heat than non-metal. This is because of metals have the "loosest" outer electrons, which are free to carry energy by collision throughout the metal<sup>8</sup>. Hence panchaloha shalaka is considered as the gold standard for Agnikarma procedure.

Godanta is mentioned for Twakdagha. It has property of lekhana specially when used locally. At present there is no study found regarding agnikarma by Godanta. The Godanta (bovine enamel) is rich in elements like Carbon, Oxygen, Calcium, Phosphorous and Nitrogen.

The greater the size of the material involved in the transfer, the more heat is need to warm it, so shorter object with smaller cross-section are the best as they minimize the heat energy. With this objective Godanta<sup>9</sup> is been used as a Dahanopakarana. More over Godanta is cost-effective than Panchaloha shalaka and it is a waste product of dead cow which can be easily accessed.

Hence the study was planned to evaluate the efficacy of Agikarma with Godanta in different tender points along the course of Sciatic Nerve of affected limb. This study is aimed at comparing 40 patients with the clinical features of Gridhrasi were divided into two groups and treated with 2 different Dahanopakarana i.e Godanta and Panchaloha shalaka

**OBJECTIVES OF THE STUDY**

To compare the efficacy of Agnikarma with Godantha & Panchaloha Shalaka in the management of Gridhrasi with special reference to Sciatica.

**MATERIALS & METHODS**

**Clinical source:** the clinical study had been carried out exclusively in total 40 Patients suffering from clinical features of *Gridhrasi* of either sex will be selected from O.P.D and I.P.D Department of Shalyatantra of Taranath Government Ayurvedic Medical College and Hospital, Ballari. Were randomly selected for the study & dividing in two groups

**Group A:** Agnikarma with Godanta

**Group B:** Agnikarma with Panchaloha Shalaka

**Drug source:**

- A. Godanta is collected from dead cow from slaughter house
- B. Panchaloha shalaka



**GODANTA**



**GODANTA SHALAKA**



**PANCHALOHA SHALAKA**

**Intervention:**

Groups	No. of patients	Intervention
Group A	20	Agnikarma with godanta
Group B	20	Agnikarma with panchaloha shalaka

**Inclusion criteria:**

- Patients with age group of 20-60 years irrespective of Sex, Religion Occupation.
- Patients having the clinical features of gridhrasi i.e Ruk, Toda, Stambha, Spandana in the Sphik, Kati, Uru, Janu , Jangha, Pada of the affected side of the leg & confirmed by positive SLR test were selected for the study.

**Exclusion criteria**

- Onset of the disease more than one year will be excluded.
- Patients with other Systemic Disorder or any Serious illness, Having history of Compression Fracture, Lumbar Canal Stenosis, Disc Prolapsed, Traumatic Paraplegia, Paraplegia, Hemiplegia, Bowel & Bladder Incontinence
- Agniakrama Anarha

**Total study duration**

➤ Treatment duration: 21days.

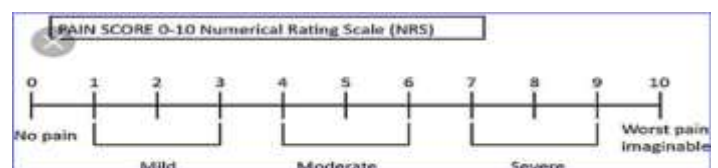
➤ Follow up: 1 Month

• Selected 40 patients of Gridhrasi are randomly divided into Group A and Group B, 20 patients' in respective groups.

Group A	Agnikarma with godanta	Once in a week	3 sittings
Group B	Agnikarma with panchaloha shalaka	Once in a week	3 sittings

**PARAMETERS FOR ASSESSMENT**

**CRITERIA**





**SUBJECTIVE GRADINGS**

1.	<b>Ruk</b>	Grade-0 – No pain
		Grade-1 – Painful walk without limping
		Grade-2 – Painful walks with limping but without support
		Grade-3 - Painful walks only with supports
		Grade-4 –Severe pain & unable to walk
2.	<b>Toda</b>	Grade-0 – No pricking sensation
		Grade-1 – Occasional pricking sensation
		Grade-2 – Mild pricking sensation
		Grade-3 – Moderate pricking sensation
		Grade-4 - Severe pricking sensation
3.	<b>Stambha</b>	Grade-0 – No stiffness
		Grade-1- Stiffness for few minute after sitting for long duration but relieved by mild movement
		Grade 2 – Stiffness more than 1 hour or more than once in a day but routine works are not disturbed
		Grade- 3 – Stiffness lasting for more than 1 hour or many times a day mildly affecting the daily routine.
		Grade-4 –Episodes of stiffness lasting for 2-6 hours. / Daily routine are hampered severely
4	<b>Spandana</b>	Grade-0 – No Spandana
		Grade-1 – Sometimes for 5 to 10 minutes
		Grade-2 – Daily for 10 to 30 minute
		Grade-3 – Daily 30 – 60 minutes
	<b>Suptata</b>	Grade 0 - Absent
		Grade 1 - Present

Assesment was made on the basis of improvement of sign & symptoms for which suitable score were assigned.

**OBJECTIVE GRADINGS**

<b>SLR</b>	GRADE 0 - More than 90°
	GRADE 1 - 71°-90°
	GRADE 2 - 51°-70°
	GRADE 3 - 31°-50°
	GRADE 4 - Upto 30°

**PROCEDURE**

- Nature of the study will be explained to the patients and consent will be taken.
- Required Dahanopakarana kept for heating.
- Patient will be made to lie in prone position with leg extended and as comfortable to patient
- The Godanta /Panchaloha shalaka are made into red hot over the flames of gas stove.
- Most tender points are marked over the kati pradesha and along the course of the sciatic nerve
- Agnikarma done by using either Godanta/Panchaloha Shalaka over the most tender area and along the course of the nerve.
- Number of Bindhu depend upon the path and intensity of the pain.
- Samyak Dagdha lakshanas like Twak Sankocha, Shabdha pradurbhava, Durgandhata are observed.
- The part where Agnikarma has done should be anointed with Madhu & Gritha is applied over Dagdha Vrana.



**OBSERVATIONS:**

The following results was found after completion of the procedure majority of the patients belongs to the age group of 41- 50years (35%), were predominantly Males(82%), Hindus (92%), belongs to hard worker, labour & farmers (40%), maximum patients were 27(67.5%) belongs to middle class, (35%) patients were having abnormal gait, (52.5%) were affected by right leg, maximum(i.e.77.5%) of patients had severe pain (Grade 7-9), maximum (27.55 %) patients had occasional pricking pain, (27.5%) (i.e Grade1) patients had sthambha , (32.5 % ) (i.e Grade 2 & 3) of patients had maximum Suptata, (35%) of patients had suptata numbness present & SLR test positive as was present in 60% of patients i.e 51-70 degree of Grade 1 SLR

Group A	BT	AT	%	S.D	WSRT - Value	Z-value	P-value
Ruk	6.700	1.4	79.10	1.031	-210.00	-3.972	<0.001
Toda	1.750	0.650	62.85	1.071	-91.000	-3.244	<0.001
Sthamba	1.300	0.300	76.92	1.170	-66.000	-2.979	<0.001
Spandana	1.350	0.250	81.48	0.852	-120.000	-3.508	<0.001
Sakti utkshepa nigraha	1.350	0.250	74.07	0.55	-190.000	-3.987	<0.001
Suptata	0.65	0.2	80	--	--	--	<0.004

**Effect of treatment in Group B**

Group B	BT	AT	%	S.D	WSRT - value	Z-value	P-value
Ruk	6.700	1.6	76.11	1.142	-210.00	-3.947	<0.001
Toda	2.150	0.35	83.72	1.24	-153.00	-3.655	<0.001
Sthamba	1.700	0.20	61.76	1.318	-105.00	-3.332	<0.001
Spandana	2.400	0.600	75	1.056	-153.000	-3.674	<0.001
Sakti utkshepa nigraha	1.350	0.1	74.07	0.55	-190.000	-3.987	<0.001
Suptata	0.65	0.15	85	--	--	--	<0.002

**Comparative effect of treatment in between the Group A and Group B**

PARAMETERS	GROUP A	GROUP B	T-VALUE	P-VALUE	REMARKS
RUK	5.00	5.00	422.50	0.736	N.S
TODA	1.000	2.000	335.000	0.037	S
STAMBHA	0.000	1.000	380.500	0.405	N.S
SPANDANA	1.000	1.000	332.000	0.029	N.S
(SLR)	1.000	1.000	363.00	0.151	N.S

Parameters	Test value	Df	P-value	Remarks
Suptata	1.650	1	0.362	N.S

**Effect of treatment in Group A**

**RESULTS:**

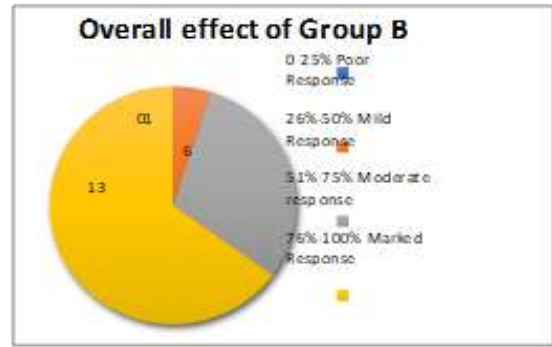
The assessment parameters like Ruk,toda, Stambha, Spandana & Sakthiutkshepanigraha were subjected to Wilcoxon Signed Rank Test to compare the mean rank within the group and Mann Whitney U test to compare the Mean Rank difference Values between the groups & draw the conclusion. The assessment parameter like suptata were subjected to McNemar's test within the group and Chi-square test between the groups.





**Overall effect of Group A & Group B**

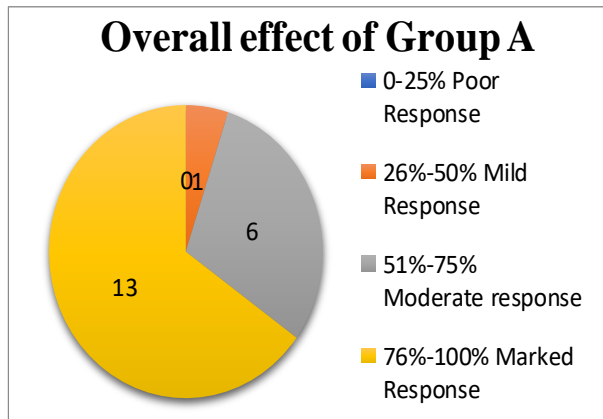
Effect of Treatment			
Class	Grading	No of patients in Group A	No of patients in Group B
0-25%	Poor Response	0	0
26%-50%	Mild Response	1	0
51%-75%	Moderate Response	6	8
76%-100%	Marked Response	13	12



**Results on Group B**

**DISCUSSION:**

Evaluating the root cause for any problem is half way of solving it. In medical science immense stress is given to find out main causative factors of any particular disease condition. Acharya Charaka has stated that for treating any disease a thorough history has to be taken, with a stress given on dosa dushyaavastha, Nidana (aetiology) & Samprapti ( pathogenesis). Agnikarma has added benefit on pain management especially in acute or highly painful condition as told by AcharyaSusrutha as Atya ugra ruja .



**Results on Group A**

Agnikarma is beneficial as Vata and Kaphahara. In Agikarma ushnaguna is transmitted into the tissue directly & neutralizes sheetaguna of Vata & thus subsides the prakupita vata & kapha dosha. Vyadhivishesha- In Chikitsa of Gridhrasi Agnikarma is been said. And also there is a reference that if any treatment modality fails ultimately Agnikarma helps.



**Effect on Ruk:** Agnikarma with Godanta has better effect in terms of Ruk( pain). This may be because in Gridhrasi, Ruk (Pain) is due to Sheetaguna of Vata. Agni Karma by its Vata Shamaka property rearranged the vitiated Vata by its RookshaGuna and in this way Ruk was subsided.

**Effect on Toda:** Agnikarma with Panchaloha Shalaka has better effect in terms of Toda (pricking pain). Toda is an advanced stage of Pain and it is mainly due to Chalaguna of Vata. Hence, after subsiding of vitiated Vata, Toda also was subsided after Agni Karma Panchaloha Shalaka have more heat conductivity property than Godanta, by Sukshma & Tiksha guna of Agni it has more deep penetrating effect .

**Effect on Sthambha:** Here Stambha is attributed to Sheetaguna of Vata& Kapha. Agni Karma by virtue of its Ushnaguna mitigates Sheetaguna and thus relieved the Stambha.

**Effect on Spandana:** Spandana is also the result of Chalaguna of Vata. Hence, after subsiding Vata, dosa Spandana also subsided.

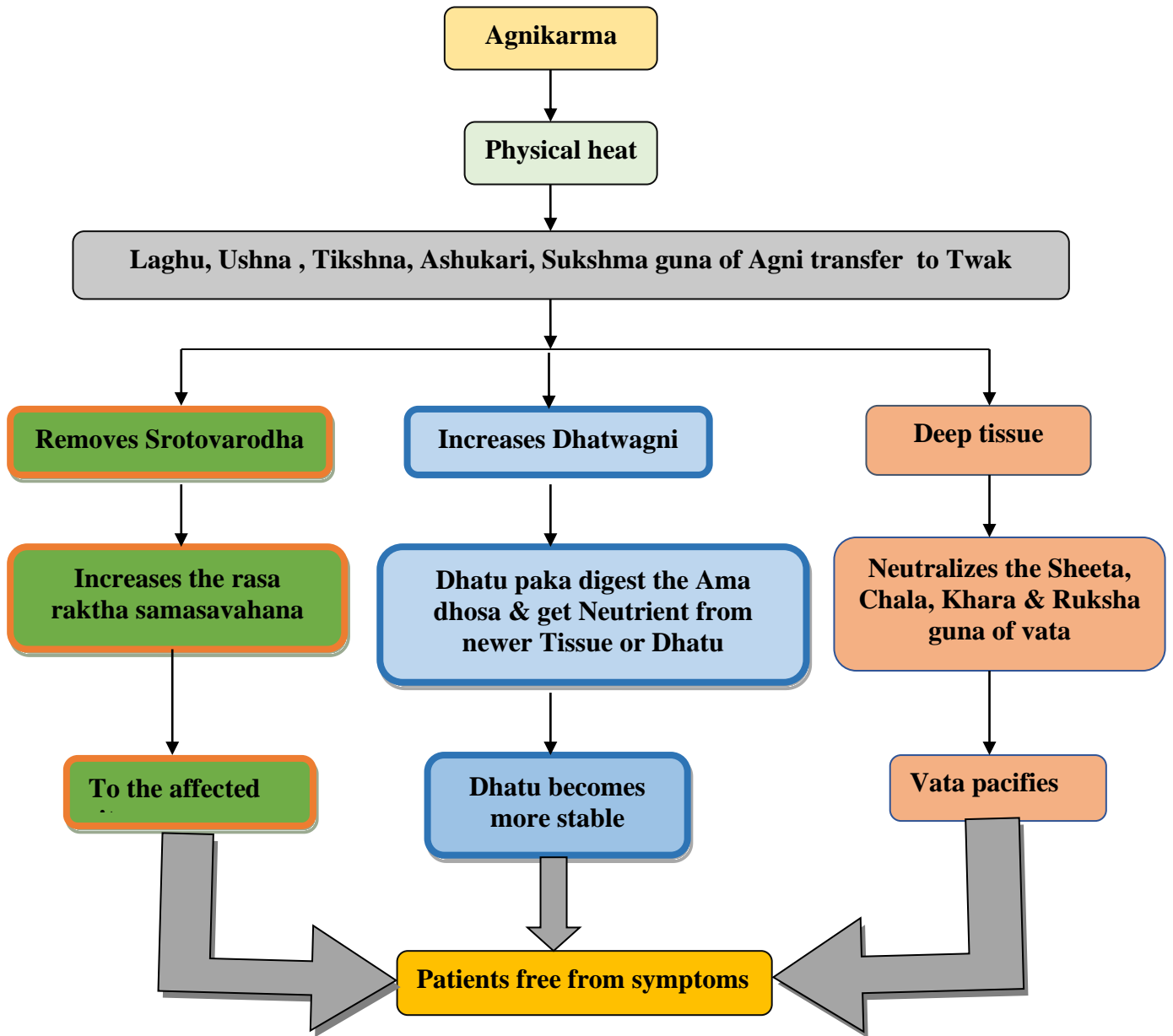
**Effect on Sakti Utkshepa Nigraha:** Agni Karma by virtue of it's Ushna, Tikshna and Sukshma guna breaks those Avarana thereby restoring the normal Gati of Vata. Hence, proper movement of Limb occurs.

**Agnikarma with Panchaloha Shalaka have added advantage over Agnikarma with Godanta in following points:**

1. If Shalaka is heated once to red hot can be used 5-8 spots at a time, over the place of maximum tenderness, but where as in Godanta, once ignited could be used only 2-3 spots at a time, again it should be replace with another Godanta , which takes longer time to complete the procedure.
2. Doing Agnikarma with Shalaka is convenient than with Godanta , while heating the Godanta if it leave for longer heat its tip gets extinct, and the outer surface of Danta ( enamel) breaks with small pieces and remains only hollow shape of the teeth root.
3. Scar marks with Godanta were large, irregular in shape, which lasts for many days.
4. Agnikarma done with Godanta , patients felt more burning sensation at site i.e. for 2 days. Where as in Shalaka , patients get relieved by 3-4 hours or at evening time.
5. Getting same size of length & width of Godanta & performing Agnikarma with smaller size of Godanta is difficult. Atleast 2-3 dantas are required for one sitting.  
Freshly collected Danta smells bad odour while heating which feels discomfort to the patients.



**Probable Mode of action of Agnikarma:**



**CONCLUSION**

- Gridhrasi is ruja pradana vataja vyadhi, if not detected early & treated properly can cripple one's life.
- Vataja and vata kaphaja are the two varieties of Gridhrasi and among the two vataja variety is frequently encountered variety in the clinical practice.
- Agnikarma has added benefit on pain management especially in acute or highly painful condition.
- The effect of treatment in both the group has shown statistically highly significant results ( P- value < 0.001) in all assessment parameters.





- Assessment Parameters are i.e. **Ruk** was (Group A -76.95% & GroupB - 76.11%), **Toda** was (Group A- 62.85% & Group B- 83.72%), **Stambha** was (Group A - 76.92% & Group B - 88.23% ) **Spandana** was (Group A- 81.48% & Group B -75%) **Suptata** was (Group A - 80 % & Group B - 85 %) & **Saktiutkeshepa nigraha** (Group A - 81.48 % & Group B - 74.07%).
- The effect of treatment was statistically Significant in between the Group A & Group B of Subjective Parameter i.e. Toda & remaining Assessment Parameters like Ruk,Toda, Stambha, Spandana, Suptata, & Saktiutkeshepa nigraha was Non – Significant in between the Group A & Group B.
- Over all effect in Group A- 76.95% & Group B – 80.35%.
- Agnikarma done with Pancha loha shalaka is more efficacious than agnikarma with Godanta in the management of Gridhrasi W.S.R. to Sciatica.



HEATING GODANTA



PERFORMING AGNIKARMA WITH GODANTA



APPLIED MADHU GRITHA



REQUIRED MATERIAL WITH GODANTA SHALAKA



SCAR MARKS



**GROUP B: AGNIKARMA WITH PANCHA LOHA SHALAKA**



**REQUIRED MATERIAL WITH PANCHA LOHA SHALAKA**



**SCAR MARKS**

**PERFORMING AGNIKARMA WITH PANCHA LOHA SHALAKA**



**HEATING PANCHALOHAS HALAKA**



**APPLIED MADHU GRITHA**



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