

## THE EFFECT OF APPLICATION OF TILA KALKA LEPA AND RUBBING BY AGNITAPTA LOHA SHALAKA IN MEDOGRANTHI WITH SPECIAL REFERENCE TO LIPOMA

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Article Received on 18/10/2019

Article Revised on 08/11/2019

Article Accepted on 29/11/2019

### ABSTRACT

In *Ayurveda*, swelling which is like a cyst or tumour is called as *Granthi*. And when the *granthi* is made up of *Meda*, it is called as *Medogranthi* and it can be correlated to lipoma. Lipoma is composed of mature adipocytes. It is the most common benign tumour (karyotype 12 q change). It is called as universal tumour as it can occur anywhere in the body where there is fat. Lipoma is common in back, shoulders, abdomen and upper arm. Treatment modalities explained in modern sciences are invasive and costly. Most of the time surgical excision is done, but that also leave a scar. So, patients tend to avoid the scars, and afraid of surgery. There are many treatments given in *Ayurvedic* texts for *Medogranthi*, one of them is using of *Tila Kalka Lepa* covered with two layers of cotton cloth and rubbing with *Agnitapta Loha Shalaka*. An effort is made to find weather this treatment explained by *Sushruta* is effective or not today. **Materials and Methods:** It is a clinical study conducted on thirty patients, at Parul Ayurveda hospital. The treatment protocol *Tila Kalka Lepa* covered with two layers of cotton cloth and rubbing with *Agnitapta Loha Shalaka* was done for 7 days. Patient was followed one month later. Before and after, size of lipoma was assessed, after 7 days treatment. Ethical clearance was obtained from institutional ethics committee (IEC No. PU/PIA/IECHR/2017/45) and this study was registered in Clinical Trial Registry of India. (CTRI/2018/04/013208). **RESULTS:** The change in the before and after the treatment were assessed by the paired 't' test. In this study 83.3% patients had shown reduction in size. While 16.7% got no relief. Overall average effect of the therapy was 30%.

**KEYWORDS:** *Medogranthi*, Lipoma, *Tila Kalka Lepa*, *Loha Shalaka*.

### INTRODUCTION

According to *Sushruta*, when vitiated *vatadi* doshas further vitiate the *Mamsa*, *Rakta*, *Kapha* and *Meda dhatus* they form an upright tubercle like appearance or swelling that's why it is called as *Granthi*. And when the *granthi* is made up of *Meda*, it is called as *Medogranthi* and it can be correlated to lipoma. A lipoma is a lump of fatty tissue between the skin and the underlying muscle. It feels doughy and may be able to move it around a bit. A lipoma is usually painless, harmless, and commonest of all benign tumours (karyotype 12 q change). Cause of lipoma is still unknown today. The tendency to develop a lipoma is not necessarily hereditary, although hereditary conditions such as familial multiple lipomatosis might include lipoma development. Genetic studies in mice have shown a correlation between the HMG I-C gene (previously identified as a gene related to obesity) and lipoma development. Treatment modalities explained in

modern sciences are invasive and costly. Most of the time surgical excision is done, but that also leave a scar. So, patients tend to avoid the scars, and afraid of surgery. There are many treatments given in *Ayurvedic* texts for *Medogranthi*, one of them is using of *Tila Kalka Lepa* covered with two layers of cotton cloth and rubbing with *Agnitapta Loha Shalaka*. An effort is made to find weather this treatment explained by *Sushruta* is effective or not in today's era.

**AIM:** To see the effect of application of *Tila kalka lepa* and rubbing by *Agnitapta Loha Shalaka* in *Medogranthi* w.s.r. to Lipoma.

### OBJECTIVES

1. To assess and standardise the temperature gradient of the *Shalaka*.

2. To assess the change in size of lipoma before and after treatment.
3. To assess the effect of procedure on the skin.

### Diagnostic Criteria

Cases were diagnosed on the bases of clinical features of lipoma.

U.S.G was used to determine the plane (sub-cutaneous) and size of lipoma.

Size was also measured by physical examination.

### Clinical Features

- Localized swelling, which is lobular (surface), non-tender.
- Often fluctuant like feel but not (because fat in body temperature remains soft). It is usually non transilluminant.

- Mobile, with edges slipping between the palpating finger (slip sign).
- Lipomas may be pedunculated at times.
- Trunk is the main common site; nape of neck and Limbs a next common.
- Clinically lipoma can be single, multiple or diffuse.
- It is not attached to the skin, so that the skin over the swelling can be pinched up apart from the swelling. But there are fibrous strands which connect the capsule of the up against resistance with one hand lipoma to the skin and that is why when the skin overlying and the lipoma is moved with the tumour is moved, there is dimpling on the skin. (dimple sign).

**Table 1:**

Inclusive criteria	Exclusive criteria
Patients having lipoma with circumference (maximum length and maximum breadth) between 1cm-25 cm. irrespective of gender.	Patients having skin diseases (like eczema, psoriasis, etc.)
Age group – 18 to 70 years.	Lipoma present on face.
Sub-cutaneous lipoma was included.	Uncontrolled diabetes.
Patients who gave written informed consent.	If having any injury at or near the site of lipoma

### Differential Diagnosis

- Neurofibroma it moves horizontally but not longitudinally along the line of nerve. Neurofibroma is firmer.
- Cystic swelling like dermoids, subcutaneous cyst.
- Liposarcoma- all Lipomas are benign. Large lipoma should be differentiated from liposarcoma.
- Other soft tissue tumours.

### Investigations

- Ultrasound of the local part was done to see the size and plane of lipoma.
- RBS

### METHODOLOGY

#### Collection of The Drugs And The Materials Used

- Black *Tila* seeds and Black *Tila Taila* were collected from the local market, and *kalka* was prepared in Pharmacy of Parul Institute of Ayurveda, Vadodara, Gujarat.
- *Loha Shalaka* was made from the local market from blacksmith. New dry cotton cloth of GSM 135 was used.
- Infrared thermometer was used to record the temperature.

### Procedure

#### 1. Preparation of *Tila Kalka*

- Preparation of *kalka* was made according to *Sharangdhara Samhita*.
- Fresh *kalka* was made before every sitting of the treatment.

- Quantity sufficient *tila* was taken, paste was made by mixing half quantity of water and half of oil. So that it can be stick to the skin.

#### 2. Procedure

- Written informed consent was taken from the patient.
- Patient was made to sit or lie down in comfortable position. Freshly made *Tila Kalka* was warmed and applied over the lipoma (5mm thickness).
- 2 layer of cotton cloth was placed over the *Kalka*. *Agnitapta Loha Shalaka* was rubbed over the *kalka*. Till the patient can tolerate the heat. Standard temperature maintained of *Shalaka* was 350°C (on flame).
- After maximum tolerance, rubbing was stopped. And *kalka* allowed to cool down itself and then removed.
- Post procedure advice was given as:
- Patient was asked not to wash the site of procedure upto one hour.



Fig. 1: Black sesame oil.



Fig. 2: Black sesame seeds.



Fig. 3: *Loha Shalaka*.



Fig. 4: Infrared Thermometer.

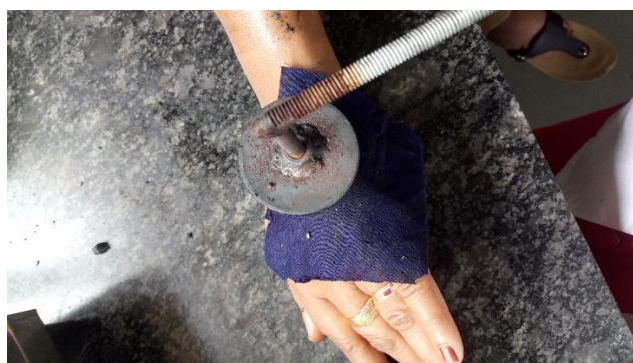


Fig. 5:

**Assessment Criteria**

1. Size of lipoma

Table 2:

Sr. No.	Size	Grading
1	Disappearance of lipoma	0
2	1-5 cm	1
3	5-10 cm	2
4	10-15 cm	3
5	15-20cm	4
6	20-25 cm	5

2. USG (before starting the treatment and after the 7 days of treatment)

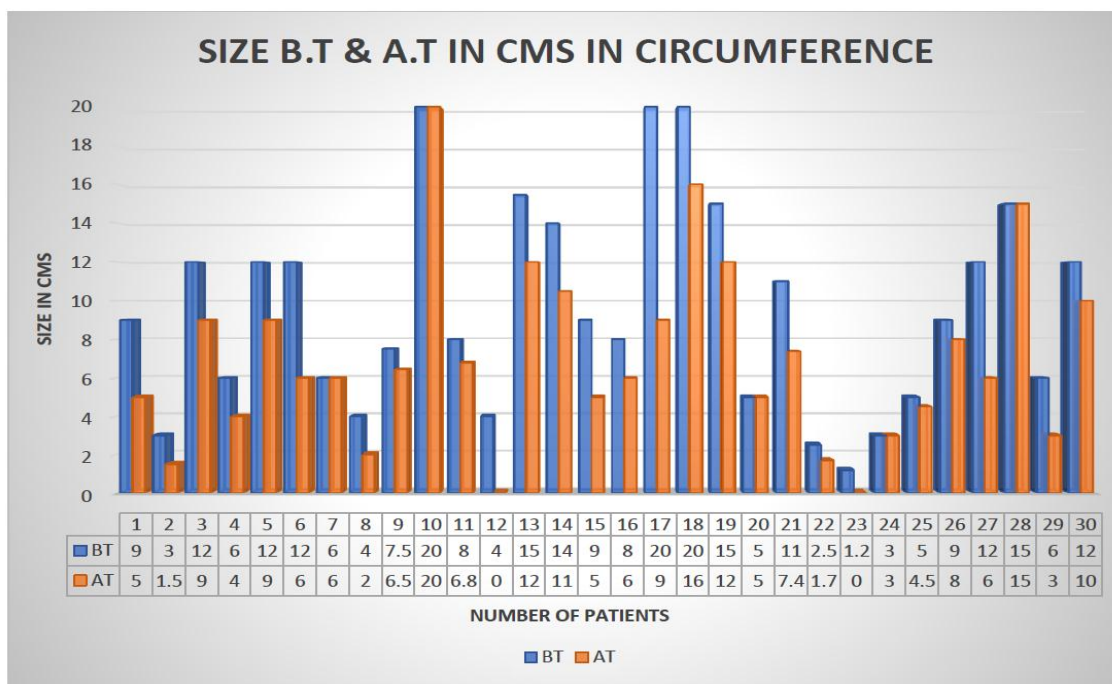


Fig. 6: Distribution of patient data acc. to the size of lipoma Before Treatment (B.T) and After Treatment (A.T) in cms circumference.

Table 7:

Sr. No.	BT	AT	DIFF.CM	DIFF.%
1	9	5	4	44.44%
2	3	1.5	1.5	50.00%
3	12	9	3	25.00%
4	6	4	2	33.33%
5	12	9	3	25.00%
6	12	6	6	50.00%
7	6	6	0	0.00%
8	4	2	2	50.00%
9	7.52	6.45	1.07	14.23%
10	20	20	0	0.00%
11	8	6.8	1.2	15.00%
12	4	0	4	100.00%
13	15.46	12	3.46	22.38%
14	14	10.5	3.5	25.00%
15	9	5	4	44.44%
16	8	6	2	25.00%
17	20	9	11	55.00%
18	20	16	4	20.00%
19	15	12	3	20.00%

20	5	5	0	0.00%
21	11	7.38	3.62	32.91%
22	2.52	1.7	0.82	32.54%
23	1.19	0	1.19	100.00%
24	3	3	0	0.00%
25	5	4.5	0.5	10.00%
26	9	8	1	11.11%
27	12	6	6	50.00%
28	15	15	0	0.00%
29	6	3	3	50.00%
30	12	10	2	16.67%
<b>AVG</b>	<b>9.56</b>	<b>6.99</b>	<b>2.5</b>	<b>30.74 %</b>

## DISCUSSION

Etiology mentioned regarding *Medogranthi* is when a person eats a food, which increases *meda dhatu* regularly then that vitiated *meda* or due to *vata*, that *meda* gets in the skin and *mamsa*, produces *Medogranthi*. There are 9 types of *granthi* mentioned in various *Ayurvedic* texts as *Vataja*, *Pittaja*, *Kaphaja*, *Raktaja*, *Siraja*, *Mamsaja*, *Medoja*, *Asthija*, *Vranaja granthi*. *Vataja*, *Pittaja*, *Kaphaja*, *Raktaja* and *Medogranthi* are *Sadhya*. Hige, Rough, *Chala*, present on *Marma Sthana*, *Kantha* (Throat), and Abdomen are *Asadhya*. Lipoma is a benign tumour of mature fat cells. It has been found from the review of lipoma that there is genetic involvement in cause of the lipoma. Generally, they are painless, and removed because of cosmetic purpose. For treatment complete excision is required as per modern science. One of the treatments mentioned in *Ayurvedic* texts was taken for the study, as on the *Medogranthi* application of *Tila Kalka Lepa* was done then covered with 2 layers of cotton cloth and rubbing by *Agnitapta Loha Shalaka*. *Kalka* preparation was done as mentioned in *Sharagdhara Samhita*, by mixing *Krishna Tila Taila* and water so that a uniform paste was made and can be stucked to the skin.

*Shalaka* was made from iron metal from local market by blacksmith, as it is mentioned in *Sushruta Samhita*. New cotton cloth of GSM 135 was taken. *Tila kalka* was made fresh for each sitting. Cloth was also used fresh.

*Krishna Tila* seeds and *Krishna Tila Taila* were used for the treatment, as the potency of *Krishna Tila* is mentioned more in the texts. Infrared thermometer was used to record the temperature of the *shalaka*, and temperature changes on the skin before and after the procedure.

## DISCUSSION ON RESULT

- Paired 't' test was used to test the significant difference between paired groups of data. A very high significant difference ( $P < 0.001$ ) between the two groups of Before Treatment and After Treatment at 5% level of significance. Out of 30 patients, 25 recorded reduced size in AT scores when compared with BT scores while none of the

patients recorded any increase in size after the treatment.

- As above results shown in 83.3% patient there was reduction in size. As the properties of *Tila* is *Ushna veerya* and *vata shamaka* so due to this property *Tila* application along with mild *Dahan* with hot iron rod may dissolve the excessive *meda* under the skin.
- Tila* contains two compounds as sesamin and sesamol. Which increases fat oxidation and, PPAR alpha activation by sesamin increases the rate and capacity of cells to burn fat (Sawada et al., 2001; Kushihiro et al., 2002). Sesamin acts on the level of gene, hence lower the lipogenesis. So, this activity of sesame may cause the reduction of size of lipoma.
- The blisters have appeared in 33% patients that may be due to the *ushna guna* of *Tila*, and temperature rise at the site. Blisters have no pain in them. As *Tila* has properties of *vrana ropana* in burnt wounds also, the treatment was continued, for faster healing application of *Shat dhauta ghrta* was done on blister.
- The temperature gradient set for the procedure was ranging from 320°C -370°C, which was found suitable for the patient's tolerance in this study.
- There was average temperature change on the skin surface of 2-3° C, before and after the procedure. The maximum skin temperature raised upto 39°C after the procedure. Which is safe in the range of external skin temperature to heat. (38°C to 41°C). Maximum surface temperature (over the cloth) noted for patient tolerance was 76°C and minimum was 60°C.

## Overall Effect of Therapy

The study has shown there was reduction in size of lipoma showing the rejection of null hypothesis. The patients also report the same, that there was a reduction in size they have been felt.

But if we go to the complete remission of the lesion, there is not a significant change for average of all the 30 patients. Overall average change in the percentage of size of lipoma is about 30%.

## CONCLUSION

Based on the review of literature and observations made by this clinical study, which was conducted on the selected 30 patients, the following conclusions can be drawn.

1. The *nidana* that are mentioned for *medogranthi*, remain same till today. *Medogranthi* is made up of *meda*. In contemporary science it has been found lipoma is made of adult type of fat cells. The cause for the lipoma is unknown and shows genetic involvement of karyotype 12q change.

2. *Tila* or sesame has two compounds as sesamin and sesamol which increases the fat oxidation. Sesamin acts on the level of gene, hence lowers the lipogenesis. So, this activity of sesame may cause the reduction of size of lipoma.

3. Temperature gradient found most effective during this study was ranging between 320°C- 370°C, which was got in 30 number of patients. With a p value of 0.000 which shows significance in the study. Thus, the range of temperature can be maintained between the same. The standard temperature was maintained of *shalaka* was 350°C (on flame).

4. Average time used for the procedure was 15- 20 minutes. Average change in size of lipoma was 30% (2.56 cm), regarding the complete remission of the lipoma during 1 week of treatment period. As the  $p < 0.001$ , this study has rejected null hypothesis.

5. There is a change in skin colour noted before and after procedure i.e. from normal skin colour to reddish skin colour. Blisters had appeared in 30% patients. That were appeared after 4-5 hrs of procedure. Blisters were painless and *Shat dhaut ghrith* was applied for healing.

### Limitations of the study

- Type of assessing the parameters can be further standardised. As using ultrasound as a parameter of size measurement; problem has been faced because there are technique differences has been found. As one person put how much pressure and axis on the lipoma, is different by different person.
- This treatment was found to be time consuming, and not feasible for multiple lipomas in today's fast-moving life, as patient need faster results.

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