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# Healing Effect of *Karanjadi Ghritha* Topically in *Ksharadagdha Vrana* of Low Anal Fistula- A Case Study

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## ABSTRACT

Fistula-in-ano is an inflammatory track lined by unhealthy granulation tissue which connects perianal skin superficially to anal canal, anorectum or rectum deeply. The common surgical procedure adopted in the treatment of fistula-in-ano is fistulectomy and fistulotomy. In Ayurveda, this disease may be correlated to *Bhagandhara*. *Acharya Susruta* mentioned excision of the fistulous tract followed by *ksharakarma* or *agnikarma* in the management of *bhagandhara*. *Karanjadi ghritha* mentioned in *Susrutha samhitha* '*Vidradhi chikitsadhyaya*' is indicated in *agni-ksharadagdha vrana*. In this case study, the healing effect of *Karanjadi ghritha* topically in *ksharadagdha vrana* of cut opened low anal fistula is assessed. The study was done for a period of 21 days and the outcome measures- pain, burning sensation, granulation tissue formation and length of the tract were assessed on 0<sup>th</sup>, 7<sup>th</sup>, 14<sup>th</sup> and 21<sup>st</sup> day. The result showed that the topical application of *karanjadi ghritha* is effective in healing the *ksharadagdha vrana* of cut opened fistulous tract by its *ropana* properties.

**Key Words** Low anal fistula, *Bhagandhara*, *Ksharadagdha vrana*, *Karanjadi ghritha*

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## INTRODUCTION

Fistula-in-ano is one among the common anorectal disease. It is an inflammatory track lined by unhealthy granulation tissue, having an external opening in the perianal skin and an internal opening in the anal canal or rectum<sup>1</sup>. The prevalence is greater in men than in women, with a rate of 12.3 cases per 100,000 and 5.6 cases per 100,000 population, respectively<sup>2</sup>. Fistula-in-ano can be of two types- low level fistula and high

level fistula. Low level fistulas open into the anal canal below the anorectal ring whereas high level fistulas open into the anal canal at or above the anorectal ring<sup>3</sup>. Low level fistula is common in young adult males than in females in the ratio 2:1<sup>4</sup>. The management includes Fistulectomy, Fistulotomy, Fibrin glues, Ligation of intersphincteric fistula tract (LIFT), Seton placing, Advancement flaps etc<sup>4</sup>.

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In Ayurveda, the features of Fistula-in-ano resembles with the disease *Bhagandhara*, which is one among the *Ashtamahagada vyadhis*<sup>5</sup>. In Ayurveda, *Ksharasutra* is the commonly adopted treatment modality in the management of *Bhagandhara*. Even though it is very cost-effective and has minimum chances of recurrence, the time consumption is too high and, also the individual has to suffer severe discomfort during each thread change. Exploring alternative treatment options, especially those that are non-invasive or have fewer side effects, can provide significant benefits to patient care.

*Acharya Susruta* mentioned excision of the fistulous tract followed by *ksharakarma* or *agnikarma* in the management of *Bhagandhara*<sup>5</sup>. After attaining *samyak kshara dagdha lakshanas* like reduction in pain, bleeding etc, *vrana ropana* drugs is applied over the wound. The wound thus formed should heal properly in order to get a successful outcome. ie; it should be healed properly from the base with healthy granulation tissue. Otherwise, it is more prone to infection and can cause delayed wound healing. So, there is a need of such *ropana* drugs that can heal the wound from its base within a short period of time as possible, with minimum discomfort to the patient.

*Karanjadi ghritha* mentioned in *Susrutha Samhitha 'Vidradhi chikitsadhyaya'* is having healing properties and is specifically indicated for *ksharadagdha vrana*<sup>6</sup>. Most of the drugs in *karanjadi ghritha* is having *tiktha-kashaya rasa* which can enhance the healing of the wound. So,

this study was undertaken to evaluate the healing effect of *Karanjadi ghritha* topically in *ksharadagdha vrana* of cut- opened low anal fistula by assessing pain, burning sensation, granulation tissue formation and length of the tract.

## CASE REPORT

### PATIENT INFORMATION:

A 42-year old male patient came to our OPD with complaints of painful swelling in the perianal region since 4 months associated with pus discharge since 2 months. On local examination, there was an external opening at 6 o'clock position approximately 2 cm away from the anal verge. On palpation, there was cord-like induration around the external opening towards the anal canal. Digital rectal examination revealed an internal opening in 6'o clock position approximately 1 cm above the anal verge. MRI findings suggested a low lying posterior fistulous tract with internal opening at 6'o clock position of lower anal canal and external opening in the posterior midline representing as St. James Type 1 fistula. All the laboratory investigations were found within normal limit.

## MATERIALS AND METHODS

### Materials required

- Sterile gloves
- Kidney tray
- Sterile cotton swab
- Artery forceps
- Sponge holding forceps

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- *Karanjadi ghritha*
- Sterile pad
- Gauze
- Adhesive plaster

**Interventional drug-** *Karanjadi Ghritha*

The ingredients of *Karanjadi ghritha* and its properties are shown in **Table 1**.

**Table 1** Ingredients of *Karanjadi ghritha*<sup>6</sup>

Sl No.	Drug	Rasa	Guna	Virya	Vipaka	Karma
1	<i>Nakthamala</i> <sup>7</sup> ( <i>Pongamia pinnata</i> )	<i>Tikta, Katu, Kashaya</i>	<i>Tiksna</i>	<i>Usna</i>	<i>Katu</i>	<i>KV hara, Kandughna, Krimighna, Shothahara, Bhedhana</i>
2	<i>Sumana</i> <sup>8</sup> ( <i>Jasminum officinale</i> )	<i>Tikta, Kashaya</i>	<i>Laghu, Snigdha, Mridu</i>	<i>Usna</i>	<i>Katu</i>	<i>Tridoshahara, Vrana sodhana ropana</i>
3	<i>Patola</i> ( <i>Tricosanthus dioica</i> )	<i>Tikta, Kashaya</i>	<i>Laghu, Snigdha, Mridu</i>	<i>Usna</i>	<i>Katu</i>	<i>Tridoshahara, Vrana sodhana ropana</i>
4	<i>Arishta</i> <sup>9</sup> ( <i>Azadirachta indica</i> )	<i>Tikta</i>	<i>Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>KP hara, Grahi</i>
5	<i>Haridra</i> <sup>10</sup> ( <i>Curcuma longa</i> )	<i>Tikta, Katu</i>	<i>Ruksha</i>	<i>Usna</i>	<i>Katu</i>	<i>KP hara, Krimighna, Kushtaghna, Varnya</i>
6	<i>Daruharidra</i> <sup>11</sup> ( <i>Berberis aristata</i> )	<i>Tikta</i>	<i>Laghu, Ruksha</i>	<i>Usna</i>	<i>Katu</i>	<i>KP hara</i>
7	<i>Madhucchishta</i> <sup>12-14</sup> ( <i>Cera alba</i> )	<i>Kashaya, Madhura</i>	<i>Guru, Snigdha, Mridu</i>	<i>Sheeta</i>	<i>Katu</i>	<i>P hara, Vranaropana, Sandhaniya</i>
8	<i>Madhuka</i> <sup>15</sup> ( <i>Glycyrrhiza glabra</i> )	<i>Madhura</i>	<i>Guru, Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>VP hara, Raktaprasadana, Varnya</i>
9	<i>Tiktharohini</i> <sup>16</sup> ( <i>Pichrorhiza kurroa</i> )	<i>Tikta</i>	<i>Laghu, Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>KP hara</i>
10	<i>Priyangu</i> <sup>17</sup> ( <i>Callicarpa macrophylla</i> )	<i>Tikta, Kashaya</i>	<i>Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>PV hara, Sandhaniya, Raktaprasadana, Vrana ropana</i>
11	<i>Kusa</i> <sup>18</sup> ( <i>Desmostachya bipinnata</i> )	<i>Madhura, Kashaya</i>	<i>Laghu</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>KP hara, Mutrala</i>
12	<i>Nichula</i> <sup>19</sup> ( <i>Salix tetrasperma</i> )	<i>Kashaya</i>	<i>Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>KP hara, Vrana sodhana</i>
13	<i>Manjishta</i> <sup>20</sup> ( <i>Rubia cordifolia</i> )	<i>Kashaya, Madhura, Tikta</i>	<i>Guru</i>	<i>Usna</i>	<i>Katu</i>	<i>KP hara, Varnya, Vranaropana, Shothaghna, Sonithasthapana</i>
14	<i>Chandhana</i> <sup>21</sup> ( <i>Santalum album</i> )	<i>Tikta, Madhura</i>	<i>Laghu, Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>KP hara, Daha prasamana, Durgandhahara, Krimighna, Varnya</i>
15	<i>Useera</i> <sup>22</sup> ( <i>Vetiveria zizanoides</i> )	<i>Madhura, Tikta</i>	<i>Laghu, Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>KP hara, Dahaklanthihara</i>
16	<i>Utpala</i> <sup>23</sup> ( <i>Nympha stellata</i> )	<i>Madhura, Kashaya</i>	<i>Picchila, Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Pittahara, Raktha prasadaka, Dahaghna</i>
17	<i>Sariva</i> <sup>24</sup> ( <i>Hemidesmus indicus</i> )	<i>Madhura, Tikta</i>	<i>Guru, Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridoshahara, Raktha sodhaka</i>
18	<i>Trivrit</i> <sup>25</sup> ( <i>Operculina turpethum</i> )	<i>Madhura, Katu, Tikta, Kashaya</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Usna</i>	<i>Katu</i>	<i>KP hara, Rechana, Jwarahara</i>

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19 Goghri<sup>26</sup> Madhura Guru Sheeta Madhura Tridosahara, Vrana sodhana-ropana

**Poorvakarma**

- Consent from the patient was obtained.
- Under aseptic condition, the tract was laid open and *Apamarga prathisaraneeya kshara* was applied over the wound using a spatula.
- After getting *Samyak ksharadagha lakshanas*, the wound was washed with *nimbu swarasa*.
- The wound is cleaned thoroughly with a sterile cotton swab.

**Pradhanakarma**

- *Karanjadi ghritha* is taken according to the size of the wound.
- The *ghritha* is applied over the *ksharadagha vrana* as *varthi*.
- Dressing is done using sterile pad and adhesive plaster.

**e) Paschath karma**

- Participant is advised to take rest until he becomes stable.
- Advised to change the dressing next morning.
- Advised daily sitz bath with saline lukewarm water till complete healing of wound.
- *Brihat triphala churnam*- 10g with hot water at bedtime was given till complete healing of the wound.
- The dressing was repeated once daily. The assessment of the wound healing is done on 0<sup>th</sup>, 7<sup>th</sup>, 14<sup>th</sup> and 21<sup>st</sup> day.

**OUTCOME MEASUREMENTS**

**Subjective parameters**

a) PAIN - It was assessed using Visual Analogue Scale

- 0: pain absent
- 1-3: mild pain
- 4-6: moderate pain
- >7: severe pain

b) BURNING SENSATION

- 0- absent
- 1- mild
- 2- moderate
- 3- severe

**Objective parameters**

a) GRANULATION TISSUE

- 0- healthy granulation tissue
- 1- moderate granulation tissue
- 2- unhealthy granulation tissue
- 3- granulation tissue absent

b) LENGTH OF THE TRACT

- Length of the tract assessed along the long axis
- Average unit length healed per week  
= Initial length of the tract/No: of weeks taken to heal

**OBSERVATION AND RESULT**

The observations and result of the study are given in Table 2.

**Table 2** Observations and result of the study

Parameter	0 <sup>th</sup> day	7 <sup>th</sup> day	14 <sup>th</sup> day	21 <sup>st</sup> day
<b>Pain</b>	7	2	1	0
<b>Burning sensation</b>	3	1	0	0
<b>Granulation tissue formation</b>	3	0	0	0
<b>Length of the tract (in cms)</b>	3.1	2.6	1.5	0

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### DISCUSSION

Fistula-in-ano is a common yet challenging condition affecting many patients worldwide, which often requires complex surgical interventions. Exploring alternative treatment options, especially those that are non-invasive or have fewer side effects, can provide significant benefits to patient care. *Bhagandhara* is one among the disease indicated for *ksharakarma*<sup>27</sup>. After the excision of the tract followed by the application of *prathisaraniya kshara* (as in Figure 1) it is essential to use *ropana* drugs that can effectively heal the wound from its base in the shortest time possible, while minimizing discomfort for the patient.



**Figure 1:** *Ksharadagdha vrana* of cut-opened fistulous tract (Before intervention)

Before intervention, the pain score was 7 and after the application of *karanjadi ghritha*, it subsequently reduced to a score of 2, 1 and 0 on 7<sup>th</sup>, 14<sup>th</sup> and 21<sup>st</sup> day respectively. There was severe burning sensation initially, which got subsided completely on 21<sup>st</sup> day after the intervention. There was a rapid growth of healthy granulation tissue from the first week itself. The

length of the tract also got reduced subsequently with the application of *Karanjadi ghritha* (as in Figure 2).



**Figure 2** Wound after the application of *Karanjadi ghritha* (After intervention- on 21<sup>st</sup> day)

### PROBABLE MODE OF ACTION

- Healing always takes place in *Shuddha vrana*. While doing *ksharakarma*, the unhealthy granulation tissue or the fibrous tissue of the fistula tract are removed by the *Ksharana* property of *Kshara*.
- The *Laghu, Tikshna guna* of the drugs in *karanjadi ghritha* helps in cleansing the *vrana* and keeps the wound as *shudha vrana*.
- Majority of the drugs in *karanjadi ghritha* is having *tiktha- kashaya rasa*. This facilitates the *ropanakarma* due to its *sandhaniya* property.
- The *visada guna* of *kashaya rasa* plays an important role in removing the slough of the wound.
- The inflammatory stage of wound healing is clinically presented by redness, pain and burning sensation. The *pittahara* property of *karanjadi ghritha* helps in reducing the inflammatory symptoms.

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- Chemical constituents like curcumin present in *haridra*, alkaloids and flavonoids in drugs such as *jati*, *karanja*, *nimba* have strong antimicrobial and anti-inflammatory properties<sup>28-30</sup>.
- Drugs such as *haridra*, *yashti*, *utpala*, *sariva* contains tannins and phytosterols which can cause increased capillary formation and fibroblast proliferation, enhancing the rate of epithelialisation<sup>31,32</sup>.
- *Madhura rasa* is having the property *sarva dhatuwardhana* which promotes wound healing and thus reduces the size of the wound.
- *Ghritha* by its *yogavahi guna* enhances the penetration of drugs and thus cause early wound healing.

## CONCLUSION

Even though wound healing is a natural process, the topical application of *Karanjadi ghritha* has a definite role in promoting the wound healing process. *Karanjadi ghritha* is found to be effective in reducing pain, burning sensation, length of the wound and promotes healthy granulation tissue formation and thus induce early wound healing. This study could provide valuable insights into how traditional remedies can complement or enhance the wound healing process post-surgically.

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