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Effect of *Panchavalkal* formulation in the Management of Post-operative Fistulectomy Wound- A Case Report

Dikshya Paudel[1*], T. S. Dudhamal[2]

[1]PG Scholar, [2]Associate Professor and I/C HOD, Department of Shalyatantra, Institute of Teaching and Research in Ayurveda (INI). Jamnagar, Gujarat, India.

ABSTRACT:

Fistula-in-ano is a tract lined by unhealthy granulation tissue having external opening at perianal region and internal opening at anal canal or rectum. The chances of recurrence in Fistula-in-ano range between 7% and 50%. Principles of treatment in Fistula-in-ano is to heal the Fistula in reasonable amount of time with low recurrence rate. A 58-year-old male patient visited OPD with a history of surgery of a perianal abscess three times during last 4 years. After clinical examinations and MRI, the case was diagnosed as Transphincteric Fistula-in-ano. (Grade-4). The patient underwent surgery for Fistula-in-ano and after surgery, post operative wound ($9.5\times3\times4cm^3$) management was done by daily dressing with normal saline followed by irrigation of tract with *Panchavalkal Kwath* and application of *Panchavalkal Malahara* until complete healing. *Triphala Guggulu* 1g thrice daily and *Isabgol* husk 2 tablespoonsful at bedtime with lukewarm water was given for one month. The assessment was done weekly on subjective criteria like *Gandha, Varna, Srava, Vedana* and granulation tissue and objective criteria as Unit Healing Time (UHT) which was 0.3 days/cm^3 with a significant decrease in the amount of discharge, pain etc. The wound healed completely within 7 weeks. During follow up for 3 months no recurrence was noticed. This case demonstrates the significant effect of *Panchavalkal Malahara* along with adjuvant Ayurveda medicines in the management of post operative Fistulectomy wound.

KEYWORDS: Ayurveda, *Bhagandara*, Fistula-in-ano, *Panchavalkal Malahara*

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***Corresponding Author:**
Dr. Dikshya Paudel
MS (Ayu) Scholar, International scholars Hostel, ITRA Campus, Jamnagar Gujarat, India
Email: dikshyapaudel95@gmail.com

INTRODUCTION:

Acharya Sushruta included *Bhagandara* in *Astamahagada* [1] because it is difficult to treat medically and has a high recurrence rate even after surgery. Recurrence rates for Fistula-in-ano range between 7% and 50% [2] with male to female ratio as 2:1. *Bhagandara* can be treated with *Chedana, Agnikarma* or *Kshara* application [3]. Acharya *Chakrapani* and Acharya *Bhavamisra* have explained in details the preparation and application of *Ksharsutra*. Fistulectomy and Fistulotomy with or without Marsupialization of the tract, Fibrin glue and Fibrin plug, Endoscopic ablation and Ligation of Intersphincteric Fistula Tract (LIFT) are modern treatment options for Fistula-in-ano [4]. Principle of treatment of Fistula-in-ano is to heal them in a reasonable amount of time, with the lowest

possible recurrence rate, without disrupting continence [5]. Early recurrence is often attributed to premature closure of the skin edges over a Fistula site [6]. Post-operative Fistulectomy wound are more susceptible to contamination with faeces, pus, etc. leading to surgical site infection that ultimately hampers the proper healing of wound. In Sushruta Samhita eleven *Upakrama* i.e., *Apatarpan*, *Aalep, Parishek, Abhyanga, Sweda, Vimlapan, Upanaha, Pachan, Vistravan, Sneha, Vaman, Virechan* described for unsuppurated stage of *Bhagandara Pidika* [7] out of which *Parishek* (irrigation of tract) and *Aalep* (application of paste/ointment) are being carried out with the formulation of *Panchavalkal* for the management of postoperative Fistulectomy wound. *Panchavalkal* [8] is combination of bark of five plants viz. *Vata* (*Ficus bengalensis* Linn), *Udumbara* (*Ficus glomerata* Roxb), *Ashwattha* (*Ficus religiosa* Linn), *Parish* (*Thespesia populnea* Soland. ex Correa.), *Plaksha* (*Ficus lacor* Buch. Ham.). It has activities like *Vranaprakshalana*, *Vranaropana, Shothahar, Upadanshahara, Visarpahara*. [9] The *Panchavalkal* has *Kashaya* (astringent) and *Sheet* (cool) properties which are useful for *Vrana-Ropan* (wound healing), *Kaphavatahara* and also *Varnya* (complexion) and *Rakta Shodhak* (blood purifier). *Aalepa* helps in *Sodhana*, *Utsadana* (filling of deep wound with granulation tissue) and *Ropana* (healing of wound). Similarly, *Parisheka* helps in *Vedana Upasamana* (Pacifying pain) [10].

CASE REPORT:

A 58-year-old male patient visited Shalya OPD of ITRA Hospital, Jamnagar with the history of surgery of perianal abscess three times during last 4 years [Table-1] but did not get any relief. Patient had a complaint of pus discharge mixed with blood from opening at right perianal region associated with pain, throbbing in nature and persisting all day long for two weeks. After clinical examinations and MRI, it was diagnosed as Transphincteric Fistula-in-ano. (St. James University Hospital MR imaging classification perianal Fistula Grade-4). The patient underwent surgery under spinal anaesthesia. Partial Fistulectomy with *Kshara-sutra* ligation was done on 10/05/2022. During post operative period, patient was under oral antibiotic and analgesics for first five days.

MATERIALS AND METHODS

Drug preparation:

Preparation of *Panchavalkal Kwath*: *Panchavalkal Kwath* was prepared as per general classical methodology of *Kwath* preparation. *Panchavalkal Yavakuta* (coarse powder) with all ingredients in equal parts was taken in a steel vessel and 16 times of water was added to soak it overnight. Soaked *Panchavalkal* was heated on low flame with continuous stirring and reduced up to 1/4th of initial water, decoction was prepared. [11]

Preparation of *Panchavalkal Malahara*: 4 parts of *Tila Taila* (sesame oil) was taken in a steel vessel and heated over *Mandagni* (900° C to 1000° C) to remove water contain in it. One part of *Panchvalakal Kalka* was added into *Tila Taila* and subjected to heat maintaining temperature with constant stirring to avoid *Kalka* to adhere to vessel. 16 parts of *Panchavalkal Kwath* prepared as above-mentioned procedure was added in *Tila Taila*. Heating was continued up to the characteristic feature of *Khara Paka Taila* (*Panchavalkal Taila*) formed. [12] *Taila* was filtered while hot through a clean cotton cloth into a sterile stainless-steel container. Prepared oil was heated in steel vessel on stove and when the temperature of processed *Taila* reaches to 800°C, small pieces of *Siktha* (1/5th part)

was added and allowed to melt completely with continuous stirring. After complete resolving of the *Siktha* (Bee wax), the hot mixture was filtered through a clean cotton cloth into a sterile stainless container and the contents were continuously stirred until cool [13].

THERAPEUTIC INTERVENTION:

Local measures: Daily wound cleaning was done with normal saline followed by irrigation of tract with *Panchavalkal Kwath* and dressing was done with application of *Panchavalkal Malahara* until complete healing.

General measures: *Triphala Guggulu* 1g (2 tablets) thrice daily and *Isabgol* husk 2 tablespoonsful at bedtime with lukewarm water was given for one month.

Assessment Criteria

The assessment was done on every 7th day on subjective criteria like *Gandha, Varna, Srava, Vedana* and granulation tissue and objective criteria as Unit Healing Time (UHT) for 5 weeks.

Objective criteria:

Aakriti (size and shape of Wound)

a. Measurement- …….cm Length X ……cm Width X--- cm Depth.

b. Unit Healing time (UHT) [14] $= \frac{\text{Total no. of days taken during treatment}}{\text{Initial area – Last area of wound (in cube. cm)}}$

Weekly assessment of wound was done by Subjective criteria (Table-7), Objective criteria (Table-8) and measurements of wound as Unit Healing Time: 35/(114-1.05)= 0.3 days/cm^3

OBSERVATIONS AND RESULT:

The size of wound reduced remarkably in first week of treatment [Table-8]. Initially it was 114cm^3, which got reduced to 1.05 cm^3 at the end of 5th week. Odour from discharge was grade 1 on day 0 which got vanished within one week from initiation of treatment. Pain disappeared completely within second week of treatment [Table-7]. Wound healing with healthy granulation from the base of the wound was observed. Wound healed completely in 7 weeks [Fig-7]. Patient was followed up for 3 months and no recurrence was noticed.

The study revealed that *Panchavalkal* possess anti-microbial, anti-inflammatory, analgesic and wound healing activity.

Table-1: Timeline of diagnosis and interventions:

Date	Investigation Advised	Impression/ Intervention
30/04/2019		I&D of perianal abscess under local anaesthesia
14/09/2020	USG Endoanal	Irregular shaped collection involving left half of peri-anal and adjacent peri-rectal region. Liquified area measures maximum 49×51×70mm. Maximum depth from skin surface 64mm and minimum depth 12mm.S/O Abscess formation.
15/09/2020		I&D of perianal abscess under spinal anaesthesia
21/12/2020	Trans-rectal Ultrasonography	Approx. 69mm long 7mm wide poorly defined fistula in right perianal region with external opening at 8o'clock position and internal opening at 7o'clock (internal opening 11mm proximal to anal verge). Adv. MRI for further evaluation. No evidence of perianal abscess at

		present.
14/06/2021	Trans-rectal Ultrasonography	42mm long and 10mm wide sinus tract is seen in right perianal region. Internal opening at 6o'clock position 9mm proximal to anal verge external end is seen at 7o'clock 18mm deep to overlying skin.
10/09/2021	Trans-rectal Ultrasonography	37×28×33mm (vol. 18cc) right perianal abscess at 7o'clock. Cranial margin of the abscess 44mm deep to perianal skin. Caudal margin of the abscess 17mm deep to perianal skin. 77mm long sinus tract is seen in right perianal region. Internal opening between 6-7o'clock position, 12mm proximal to anal verge. External end is seen 7o'clock position extending up to subcutaneous fat without opening externally. Sinus tract communicating with abscess.
13/09/2021		I&D of perianal abscess under spinal anaesthesia
03/05/2022		Visited Shalya OPD, ITRA Hospital
04/05/2022	MRI Perianal Region	Trans-sphincteric fistula in right ischio-anal fossa arising from posterior inter-sphincteric space of mid anal canal with internal opening at 7o'clock position. Secondary tract-collection in right ischio-anal fossa running superiorly extending up to right levator ani muscle and inferiorly reaching skin at right gluteal fold. St. James University Hospital MR imaging classification of perianal Fistula Grade-4.

Table-2 *Gandha* (Odour of discharge) [23]

No smell	Grade 0
Bad smell	Grade 1
Tolerable unpleasant	Grade 2
Foul smell which is intolerable	Grade 3

Table-3 *Varna* (Color of margin & surrounding skin) [24]

No Marginal discoloration & Normal surrounding skin	Grade 0
Mild Marginal discoloration & Mild Pigmentation in Surrounding skin	Grade 1
Moderate Marginal discoloration & Moderate Pigmentation in surrounding skin	Grade 2
Severe Marginal discoloration & Severe Pigmentation in surrounding skin	Grade 3

Table-4 *Srava* (Discharge) [25]

No Discharge	Grade 0
Serous Discharge	Grade 1
Sero-purulent discharge	Grade 2
Purulent discharge	Grade 3

Table-5 Granulation Tissue

100% area having healthy red granulation without discharge	Grade 0
70% area having granulation with serous discharge	Grade 1
30% area having granulation with serous discharge	Grade 2
Wound having pus discharge and slough	Grade 3

***Vedana*- (Pain)** *Visual Analogue scale* (VAS)
An imaginary line of 10 cm was marked to indicate intensity of pain to assess the pain intensity in the patients.

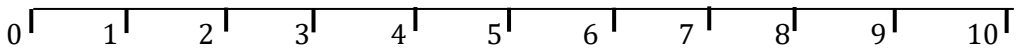

Table-6 VAS

Grade of Pain	Description
0	No pain
1	Very light, barely noticeable pain. Most of the times patient never think about pain.
2	Mild Pain which is discomforting
3	Very noticeable pain, but patient groused to it.
4	Strong deep pain. Distressing to patient. Patient notice the pain all the time and cannot completely adapt
5	Strong deep piercing pain. Very distressing to patient. Patient notice the pain all the time and it affects normal lifestyle.
6	Very strong, deep piercing pain partially dominating the senses and causing trouble holding a job
7	Very strong, deep piercing pain completely dominating the senses. Patient effectively disabled and frequently cannot live alone
8	Very strong, deep piercing pain with severe personality changes if the pain is present for long time
9	Patient cannot tolerate it and demand pain killers or surgery whatever be the side effects or risks
10	Unimaginable unspeakable

Table-7: Subjective Criteria

Day	**0**	**7**	**14**	**21**	**28**	**35**
Gandha	Grade-1	Grade-0	Grade-0	Grade-0	Grade-0	Grade-0
Varna	Grade-1	Grade-1	Grade-1	Grade-0	Grade-0	Grade-0
Srava	Grade-3	Grade-2	Grade-2	Grade-2	Grade-1	Grade-0
Granulation tissue	Grade-2	Grade-1	Grade-1	Grade-1	Grade-0	Grade-0
Vedana	Grade-2	Grade-1	Grade-0	Grade-0	Grade-0	Grade-0

Table-8: Measurements of wound

Day	0	7	14	21	28	35
l×b×d (cm^3)	9.5×3×4 ($114cm^3$)	5×2.2×3 ($33cm^3$)	4×2×2.5 ($20cm^3$)	3.5×1.6×2.3 ($12.88cm^3$)	3×1.5×2 ($9cm^3$)	1.5×1×0.7 ($1.05cm^3$)

Clinical Images:

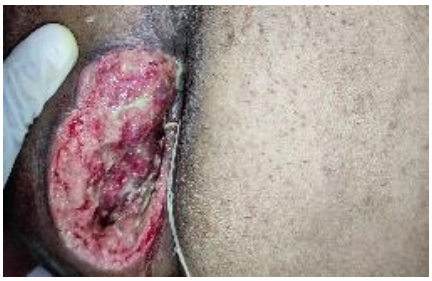

Figure-1: Day 0

Figure-2: Day 7

Figure-3: Day 14

Figure-4: Day 21

Figure-5: Day 28

Figure-6: Day 35

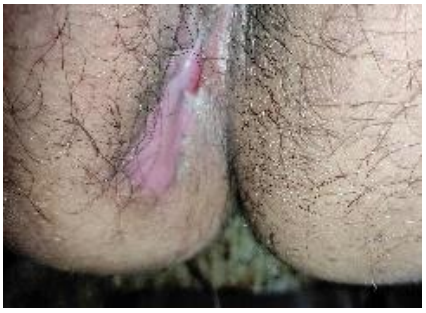

Figure-7: Completely Healed

DISCUSSION:

After fistula surgery wound healing takes few weeks to months to heal completely. Due to contamination of wound with feces the healing takes more time as compared to wounds at the other sites. Careful postoperative care may improve wound healing and decrease the chance of recurrence. To overcome this adverse effect and enhance rapid wound healing by controlling infections, and appropriate pus drainage, herbal wound healing agent like *Panchavalkal* is effective in management of post Fistulectomy wound.[15] *Pachavalkal* a

polyherbal formulation of bark of five plants viz. *Vata* (*Ficus bengalensis* Linn), *Udumbara* (*Ficus glomerata* Roxb), *Ashwattha* (*Ficus religiosa* Linn), *Parish* (*Thespesia populnea* Soland. ex Correa.), *Plaksha* (*Ficus lacor* Buch. Ham.) which has been proven to have anti-infective action against various microorganisms through various studies. *Panchavalkal Kwath* for *Parisheka* (irrigation of tract) helps in cleansing the tract removing pus and unhealthy granulation as possess *Vrana Sodhana* and *Vrana Ropana* properties.

Malahara (ointment) form of drug is essential for wound healing due to its biocompatibility, as it maintains moist environment of wound thus preventing dehydration that helps for early healing. It allows gas permeability, promotes epithelization and painless dressing due to its non-adherent property[16]-[17]. Dressing with ointment is considered as occlusive, which blocks transcutaneous water loss and natural essential fatty acids easily penetrate into cell membranes, to enhance drug penetration and hastens wound healing[18]. *Panchavalkal* is *Ruksha* (dry) and *Kaphavatahara*, *Kashaya Rasa* that might facilitate debridement of dead tissue and helps healing wound by reducing infection. [19]

Triphala Guggulu [20] having *Madhur Rasa, Ushna Virya* and *Katu Vipaka*, reduces *Kleda, Paka*, *Putigandha, Sotha* along with remarkable reduction of pain at wound site. [21]

Isabgol husk is a bulking agent which plays important role in postoperative care of Fistulectomy by improving hygiene and decreasing discomfort with bowel movements. [22]

CONCLUSION:

The study shows *Panchavalkal* formulations used in this case has potential to heal infected wounds reducing the chance of recurrence. To add scientific validation to the study, it is needful to carry it out in large number of samples.

DECLARATION OF PATIENT CONSENT:

It was taken from the patient before starting of the treatment protocol as well as prior to publication of the case details and pictures.

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