

Wound healing potential of three forms of Panchavalkala in post-operative fistula wounds- Case Series

Vaikhari Dhurve^{1*} Dudhamal Tukaram²

¹PhD Scholar, ²Associate Professor and I/C HOD

Dept. of Shalya Tantra IPGT&RA, Gujarat Ayurved University, Jamnagar, Gujarat, India

Abstract:

Wound healing has been defined as a complex dynamic process results in restoration of anatomical continuity and function of particular part of body. In ayurveda many herbal drugs have been described for wound healing. In Sushruta Samhita, Bhagandara (fistula in ano) has been described as one of the Ashtamahagadas (eight major diseases) due to its recurrent nature. Due to contamination of ano rectal wound with feces the healing of ano-rectal wound take more time as compare towards at other parts of body. After fistula surgery wound healing takes few weeks to months. In this case series 8 patients of fistula in ano were treated with partial fistulectomy plus *Ksharsutra*. *Panchavalkala* ointment and *Panchavalkala* decoction was prepared in Department of RSBK by adopting standard manufacturing procedure of classic. Adjuvant drugs *Eranda bhrista Haritaki* was also used during treatment. Three forms of *Panchavalkala* were used to treat post operative fistulotomy/fistulectomy wounds. The sign and symptoms of infection were graded before and during the course of treatment. The clinical symptoms like mal odor, color of margin and surrounding skin, discharge, pain and size and shape of wound showed significant result after the treatment. *Panchavalkala* forms are effective in wound healing in case of post operative fistulectomy wound and least recurrence.

Keywords: Ano-rectal wounds, *Bhagandara*, *Fistula-in-ano*, *Panchavalkala* Decoction, *Panchavalkala* ointment, *Vrana*, wound healing.

Received: 04.08.2020

Revised: 07.09.2020

Accepted: 20.09.2020

Quick Response code



***CORRESPONDING AUTHOR:**

Dr. Vaikhari Dhurve

PhD Scholar, Dept. of Shalya Tantra, IPGT&RA,
Gujarat Ayurved University, Jamnagar, Gujarat, India
Email: vaikhari.dhurve07@gmail.com

Introduction:

In Sushruta Samhita, *Vrana* (wound) is defined as tissue destruction and discoloration of viable tissue due to various etiologies. *Vrana* and its management has challenge.^[1] A vast scope of research exists in the field of Ayurveda for the benefit of wound healing. It is true that number of scientists and medicine experts is working on various forms of preparations which may help in achieving wound healing.

As per Ayurveda *Vrana* (wound) is a condition associated with (destruction of tissue) and characterized by *Vedana* (pain), *Srava* (discharge) and *Vikruti* (deformity). Properties of many medicinal plants for wound healing are mentioned in Ayurveda classics. In modern, wound is defined as a break in the skin, resulting from physical or thermal damage or as a result of the presence of an underlying microbe. Wound can be classified as acute wounds and chronic wounds.^[2]

Acharya Sushruta has included *Bhagandara* in *Ashtamahagadas* (eight major diseases) due to its recurrent nature that can be correlated with fistula in ano.^[3] The ano-rectal wound created after surgery need to proper attention in form of daily dressing, local cleanliness and to avoid secondary infection. Though wounds of ano-rectal area are healed early due to rich blood supply but post operative wounds healed superficially and kept raw area at the base with increased chances of recurrence. . So there is need to do proper cleaning, dressing with use of appropriate *Shodhana* (cleaning) and *Ropan* (healing) drugs that heal the wound from base and minimize recurrence.

In Sushruta Samhita eleven *Upakrama* described for in suppurated stage of *Bhagandara Pidika* in which *Sweda*, *Parishek*, and *Aalep* are being tried with the same formulation i.e *Panchavalkala* in the management of post fistulectomy wounds.^[4]

Material and Methods:**Drugs:**

Diluted *Panchavalkal* decoction advised for sitz bath two times or after defecation every day. At the time of dressing wound cleaned with concentrated *Panchavalkal* decoction after that *Panchavalkal* ointment was applied on wound.

Drug Preparation:

Diluted *Panchavalkal* decoction- *Panchavalkala* Decoction prepared as per general classical methodology of decoction preparation.^[5] *Panchavalkal Yavakuta* (coarse powder) was taken in a steel vessel and add 16 times of water to soak into overnight. Soaked *panchavalkal* was heated on low flame with continuous stirring and reduced up to 1/4th of initial water, decoction was prepared.

Concentrated *Panchavalkal* decoction- *Panchavalkala* decoction prepared by above method was again reduced 1/4th and added sodium benzoate as preservative.

***Panchavalkala* ointment-** *Panchavalkala* decoction was prepared as per classic guidelines of decoction preparation. *Snehapaka* made with *Panchavalkala kalka* (paste), *Tila Tail* and *Panchavalkal* decoction in the ratio of 1:4:16. After that one fifth of *Siktha* added to the prepared oil and ointment prepared.^[6]

Total 8 patients that were operated for fistula in ano of age group 18-70 years old

having post operative wound more than 2 cm were included in this study.

All investigations were carried out for the fitness before surgery of all patients.

Case Presentation:

Case-1: Male patient of age A 38 years diagnosed as trans-sphencter low anal fistula in ano. S/H/O fistula in ano 2 times before 6 months in private hospital but did not get relief. He had complaint of boil at perianal region from which pus discharge occurred and operated under Spinal anesthesia, partial fistulectomy with ksharsutra ligation done. After weekly assessment the symptomatic relief was noted and wound size was 29.4 cm having moderate pain, mal-odor, moderate indurations and moderate pigmentation in surrounding skin, sero-purulent discharge and no reduction in wound size, after 1month wound size 7.92 cm no pain, no odor, no indurations, normal color of margin and surrounding skin. Wound healed completely at 2 months Patient cured completely within 8weeks. Follow up of 6 months showed no any recurrence.

Case-2: Male patient of age 27 years old diagnosed as intersphincteric low anal fistula in ano. He operated for burst abscess in 2017 in private hospital. But since 1 and half month boil at perianal region from which pus discharge occurred. Patient was operated under Spinal anesthesia, partial fistulectomy with *Ksharsutra* ligation done 2 wound one at 6 O'clock and 8 O'clock positions, then weekly *Ksharsutra* change by railroad method. After weekly assessment the symptomatic relief was noted and wound size day first 25.57 at 8 o clock position

and 17.85 cm at 6 0 clock positions with intermittent pain, mal odor mild marginal indurations mild pigmentation in surrounding skin, purulent discharge, 1month 0.7 cm at 8 0 clock positions and 1.78cm at 6 o clock positions. There was no pain, no odor, no discharge, normal color of margin and surrounding skin. Patient cured completely within 8weeks. Follow up of 6 months show no any recurrence.

Case-3: Male patient of age 45 years old diagnosed as transpincter fistula in ano. H/O boil at perianal region before 3 years and taken Allopathic medicine got some relief, second time the same also. Third time he had boil in perianal region with pus discharge and increased in size and pain at that site. He operated under spinal anesthesia, with partial fistulectomy with *Ksharsutra* ligation at 11 O'clock position. After weekly assessment the symptomatic relief was noted and wound size day first 33.6 cm at 11 o clock position, 1month 2.78 cm. Patient cured completely within 10 weeks and no any recurrence up to 6 months.

Case-4: Male patient of age 44 years old diagnosed as transpincter fistula in ano. Patient reported H/O Incision and drainage before 6 months along with fistulectomy with 3 *Ksharsutra* ligation before 2 months at private hospital but non healing fistulous wound was present. He had complaint of non healing wound with pus discharge. Under spinal anesthesia, Partial fistulectomy with *Ksharsutra* ligation at 5 o clock position. *Ksharsutra* changed weekly by railroad method. After weekly assessment the symptomatic relief was

noted and wound size day first 33.6 cm at 11 o'clock positions, after 1 month wound size 2.78 cm, no odor, no pain, no marginal indurations, no discharge. Patient cured completely within 8 weeks no any recurrence upto 6 month.

Case-5: Male patient of age 50 yr old diagnosed as trans-sphencteric low anal fistula in ano. He has multiple boils at 5 and 7 O'clock positions at perianal regions with pus discharge since 1 year. He operated under spinal anesthesia, with partial fistulectomy with *Ksharsutra* ligation at 5 and 7 O'clock positions then weekly *ksharsutra* change by railroad technique. After weekly assessment the symptomatic relief was noted and wound size first day right side 71.4cm and left side 86.64 cm with mal odor, moderate, 1 month wound size right side was 2.6 cm and left side was 6.3cm, with mal odor, mild marginal indurations and normal pigmentation. Wound healed completely within 10 weeks and no recurrence.

Case-6: Male patient of age 23 years old diagnosed as Horse shoe shaped fistulas in ano with external opening at 4 O'clock position other blind end of fistula is in 8 O'clock location. Internal opening cannot be made out. S/ H/O of perianal abscess before 1 year. Patient was operated under spinal anesthesia, partial fistulectomy with *Ksharsutra* ligation at 4 to 6 o'clock positions and 4 to 8 O'clock position. After weekly assessment the symptomatic relief was noted and wound size day first right side 6.48cm and left side 9.19 cm. After 1 month right side wound healed and left side was 0.1cm. Patient cured

completely within 10 weeks and no any recurrence.

Case -7: Male patient of age 42 years old diagnosed as trans-sphencteric type low anal fistula in ano. H/O Boil at perianal region for that he taken allopathic medicine it burst and pus discharge was there. He was operated for under spinal anesthesia, partial fistulectomy with *ksharsutra* ligation at 7 O'clock positions was done. After weekly assessment the symptomatic relief was noted and wound size first day was 16.35cm, 1 month wound size was 0.75cm. Wound healed completely at 2 months. Patient cured completely within 8 weeks. Follow up of 6 months showed no any recurrence.

Case-8: Male patient of age 20 years old diagnosed as intersphincteric fistula-in-ano. H/O Boil at perianal region since 2 years for that he had taken medicine but did not get relief. Patient was operated for under spinal anesthesia, partial fistulectomy with *ksharsutra* ligation at 11 O'clock position. After weekly assessment the symptomatic relief was noted and wound size day first 7.9cm after 1 month wound size was 0.1cm, wound healed completely within 7 weeks and no any recurrence.

Methodology:

In this study, Total 8 patients of post fistulectomy with *ksharsutra* were treated with locally by three formulations. *Panchavalkala* Decoction used for Sitz bath twice a day or after defecation. *Panchavalkala* decoction (Concentrated) used for cleaning the wound at the time of

dressing. *Panchavalkala* ointment application was done on wound.
 Adjuvant drug- *Erandbhrista Haritaki* 5g at bed time if patient complaints constipation

All 8 patients having perianal wound after post fistulectomy and *Ksharsutra* were observed till complete wound healing.

Criteria of Assessment:

The sign and symptoms were assessed under the following criteria by scoring pattern in the [Table no.1]

Objective parameter:

1 Aakriti (size and shape of wound)

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

b. Unit Healing time – $\frac{\text{Total no. of days taken during treatment}}{\text{Initial area} - \text{Last area of wound (in Sq. cm)}}$



Fig-1: Clinical images of Case -2

Table no-1: Grading Pattern:

Gradation of symptoms	Score
Gandha [Smell]	
No odour	0
Mal odour	1
Varna [Marginal & surrounding discoloration]	
No marginal discoloration& normal surrounding skin	0
Mild marginal discoloration & Mild Pigmentation in Surrounding skin	1
Moderate marginal discoloration& mild Pigmentation in Surrounding skin.	2
Severe marginal discoloration & Mild pigmentation in Surrounding skin	3
Srava[Discharge]	
No discharge	0
Serous discharge	1
Sero- purulent discharge	2
Purulent discharge	3
Vedana [Pain]	
No pain (VAS-0)	0
Mild pain(VAS1-3)	1
Moderate pain(VAS 4-7)	2
Sever pain(8-10)	3

Table-2: Assessment of result (Symptomatic relief in 8 patient's scores)

Parameters	1 ST Day	7 th day	14 th Day	21 st Day	28 Day	AT
Odour (Gandha)	3	2	1	0	0	0
Peri wound skin (vrana)	3	2	1	0	0	0
Discharge (Srava)	3	2	1	0	0	0
Pain (Vedana)	3	2	1	0	0	0
Wound size (Akruti)	3	2	2	1	1	0

Table -3: Observation of wound healing (n=8):

Patient sr. no	1 st Day	7 th Day	14 th Day	21 th day	28 th day	After 1 month
Case-1	29.4 cm	24.8 cm	9.72cm	7.92cm	2.52cm	Healed
Case-2	8 o clock- 25.57cm 6o clock- 17.85cm	20.52cm 13.11cm	12.13cm 6.27cm	4.48cm 3.78cm	0.7cm 1.78cm	Healed
Case-3	33.6cm	27.6cm	16.3cm	6.68cm	2.78cm	0.06 cm
Case-4	18.72cm	13.23cm	7.56cm	3.12cm	0.35cm	Healed
Case-5	Rt side- 71.4cm Lf side- 86.64cm	47cm 51.3cm	11.8cm 27.1cm	8.52cm 8.64cm	2.6cm 6.3cm	Healed 0.09
Case-6	Rt side- 6.48cm Lf side- 9.19cm	Rt side- 4.28cm Lf side- 7cm	Rt side- 1.84cm Lf side- 4.59cm	Rt side- 0.42cm Lf side- 3.36cm	Rt side - 0.18cm Lf side- 1.58cm	Healed Lf side- 0.18 cm
Case-7	16.35 cm	11.22 cm	7.02cm	2.07cm	0.75cm	Healed
Case-8	7.9cm	7.1cm	2cm	0.2	0.1cmcm	Healed

Observations and Result:

This case series of 8 patients of post-operative wounds after fistulectomy with *ksharsutra* was conducted in IPD of Shalya Tantra. The complicated cases of post fistulectomy wound were selected and sterile dressing was done by cleaning with concentrated *Panchavalkala* decoction and

dressing with *Panchavalkala* ointment till complete healing of wounds.

In all patients *Ksharsutra* was changed after every seven days till cut through tract. The wound was observed and assessed daily for its size and margin of wound, slough, discharge, pain, and odor. [Table-2]. The size of wound reduced remarkable by every week and within

month almost 90% wound healed in all patients [Table-3]. Wound healing and healthy granulation promoted from the base in all cases. The wound size was observed to reduce with contracted edges [Fig-1].

The study revealed that the drug has active desloughing and anti-inflammatory properties due to its *Kashaya rasa* which has *Grahi* (to hold) and *Stambhana* (arresting) reduced discharge and minimize swelling. The cleaning with concentrated *Panchavalkal* decoction has a role in desloughing, relieving pain and wound contraction. By this study it can infer that further study on the large sample for its validation in management of wound healing.

Discussion:

In ano-rectal surgery specifically post fistulectomy wound is more prone to infected by local sweating, hair follicle and feces. So it need more care as compare to other sites wound. *Panchavalkal* is a group of five plants bark which includes *Nyagrodha* (*Ficus benghalensis* L.), *Udumbara* (*Ficus rac-emosa* L.), *Ashwattha* (*Ficus religiosa* L.) *Plaksha* (*Ficus lacor* Buch.), *Parish* (*Thespesia populnea*).^[7] *Panchavalkal* has properties of *Kaphavatahara* (alleviation of *Kapha* and *Vata* dosha), *Varnya* (to make normal color of scar), *Vrana-shodhana* (cleansing), *Vrana-ropan* (healing), *Shothahara* (anti-inflammatory), *Upadanshahara* (curing in genital disease), *Visarpahara* (useful in skin rashes) and *Raktashodhak* (blood purifying).^[8] Due to all these properties wounds were healed within average two months of period.

Effect of three formulations on symptoms:

Panchvalkala decoction (sitz bath)-
Panchavalkala decoction 100 ml diluted in warm water used for sitz bath. It has *Shodhana* (cleaning) and *Ropan* (healing) properties also maintain local hygiene.^[9] Pain relived due to *Guru Guna* that has *Vatahara* property so decreased pain. *Panchavalkala* has *Kashaya rasa* (astringent) predominant which have *Stambhana* property (arresting) and *Grahi* (to hold) so it helpful to reduce the wound discharges. ^[10]

Concentrated *Panchavalkala* decoction diluted with NS used to clean the wound daily. Redness reduced due to *Pittaghana* *Kashaya rasa* and *Sheeta veerya* (potency) properties of *Panchavalkala*. *Pitta shaman*, *Varnya* and *Twakprasadana* properties might be helpful to change the healed scar with normal skin coloration.

Panchavalkala ointment applied after cleaning the wound and has antimicrobial and smoothing activity.^[11] A previous work on *Panchavalkala* cream in *Vranashodhan* show encouraging results. *Panchavalkala* having *Shothahara* (reduce swelling) property due to *kashaya rasa* deceased swelling that acts as *Peedana* (act of squeezing), *Ropan* (heal) and *Shodhana* (cleaning and curative effect).

^[12] It destroyed the accumulated substance and minimizes swelling. The drug is *Ruksha* (dry) and *Kaphavatahara*, *Kashaya rasa* that might facilitate debridement of dead tissue. *Panchavalkala* ointment has healing property by reducing infection in post operative fistulectomy wound. Patients were observed for 6 months and there was no recurrence was found among all cases. By this study, it

can infer that *Panchavalkala* formulations has role in relieving pain and wound healing which can be further validate with large sample study. The study shows that time require for post fistulectomy wound healing is minimum and no any side effect of ointment and recurrence was noted. Wound healing was assessed by scoring of sign and symptoms and Unit healing time (UHT). Unit healing time is total number of days taken during treatment divided by initial area of wound minus last area of wound (in cube cm).

Conclusion:

On the basis of 8 patients case series study concluded that *Panchavalkala* in three forms (decoction, concentrated decoction and ointment) is effective to controls infection and enhance wound healing process in the post operative fistulectomy wounds without recurrence.

Declaration of patient consent:

The authors declare that that they have obtained all patients consent forms during enrollment of patients for publication clinical information blinding the identity of individuals.

Acknowledgement:

The authors acknowledge to Prof. A.B. Thakar, Director, IPGT&RA for providing the facility to treat the cases in hospital and in OT.

References:

1. Global Lower Extremity Amputation Study Group. Epidemiology of lower Extremity amputation in centre in Europe, North America and East Asia. The Global Lower Extremity Amputation Study Group .Br J Surge 2000;87:328-37.
2. Boateng J.S., Matthews K.H., Stevens H.N.E. and Eccleston G.M. Wound healing dressing and drug delivery systems: A review. Journal of pharmaceutical Sciences. 2008 ; 97: 2892-2923
3. Shashtri A, editor Sushruta Samhita Sutrasthana ch.33/4-5 Varanasi: Chaukhamba Sanskrit Sansthan; 2010. p 163.
4. Shastri A, editor Sushruta Samhita Sutrasthana ch.8 Varanasi: Chowkhambha Sanskrit Sansthan;2009. p.45-47.
5. Srivastava S, Sharangadhar Samhita. Ch 2. Varanasi: Chaukhamba Orientalia Madhya Khand. Reprint edition; 2009 p.135.
6. Shastri K. Ch.2 Delhi: Motilal Banarasidas; Rasa Tarangini. 2009.p.17.
7. Hegde Prakash L, Harini A.A Text Book of Drayaguna Vijnana Vol I. New Delhi: Chaukhamba Publications. 2016.p.426-427.
8. Bhavprakash, by Bhavmishra, Bhavprakash Nighantu, Vatadi Varga Verse 15, Varanasi: Chaukhamba Sanskrit Bhavan, 2010.p.507.
9. Khadkutkar DK, Kanthi VG. Theraputic uses of panchavalkal in different forms- A review. Ayurlog Natl J Res Ayurveda Sci 2014;2:1-5.

10. Bhavprakash, by Bhav mishra, Bhavprakash Nighantu, Vatadi Varga Verse 15, Varanasi: Chaukhamba Sanskrit Bhavan, 2010.p-192.
11. Khadkutkar DK, Kanthi VG, Dudhamal TS. Antimicrobial activity of *Panchavalkal* powder and ointment. International Journal of Medicinal Plants and Natural Products (IJMPNP). 2015; 1(3): 9-15.
12. Meena RK, Dudhamal TS, Gupta SK, Mahanta V. Wound healing potential of Pañcavalkala formulations in a post-

fistulectomy wound. Ancient Sci Life (ASL) 2015;35 (2):118-21.

Conflict of interest: Author declares that there is no conflict of interest.

Guarantor: Corresponding author is guarantor of this article and its contents.

Source of support: None

How to cite this article:

Dhurve V, Dudhamal T. Wound healing potential of three forms Panchavalkala in post-operative fistula wounds- Case series. Int. J. AYUSH CaRe. 2020; 4(3): 189-197.