

Triphaladi Oil Ointment in the Management of Post-Fistulectomy Surgical Site Infection: An Ayurvedic Case Report

**Dr. Vinod B. Hendawale¹, Dr. Omkar Khatkar², Dr. Sanjay C. Babar³,
Dr. Snehal G. Pansare⁴**

¹Assistant Professor, Department of Shalyatantra, Dr. D. Y. Patil Vidyapeeth (Deemed to be University)'s Dr. D. Y. Patil College of Ayurved & Research Centre, Pimpri, Pune-18

²PG Scholar, Department of Shalyatantra, Dr. D. Y. Patil Vidyapeeth (Deemed to be University)'s Dr. D. Y. Patil College of Ayurved & Research Centre, Pimpri, Pune-18

³Professor & HoD, Department of Shalyatantra, Dr. D. Y. Patil Vidyapeeth (Deemed to be University)'s Dr. D. Y. Patil College of Ayurved & Research Centre, Pimpri, Pune-18

⁴Assistant Professor, Department of Shalyatantra, Dr. D. Y. Patil Vidyapeeth (Deemed to be University)'s Dr. D. Y. Patil College of Ayurved & Research Centre, Pimpri, Pune-18

Abstract

Background: Surgical site infection (SSI) is a common postoperative complication that may result in delayed wound healing, persistent inflammation, and patient discomfort following anorectal surgeries. In Ayurveda, infected or non-healing wounds are described as *dushta vrana* (contaminated or chronic wound) and are managed with therapies possessing *vrana shodhana* (wound cleansing) and *vrana ropana* (wound healing) properties. Triphaladi oil is a classical Ayurvedic formulation traditionally indicated for wound management.

Case Presentation: A 40-year-old female presented with a non-healing postoperative wound in the perianal region one month after fistulectomy. The patient complained of pain, itching, and intermittent discharge from the wound despite repeated conventional dressings. Clinical examination revealed an infected postoperative wound corresponding to *dushta vrana*.

Intervention: Local wound dressing with Triphaladi oil ointment was performed daily for 21 days following wound cleansing. Healing progression was assessed using the Bates-Jensen Wound Assessment Tool.

Outcome: Progressive improvement was observed during the treatment period with reduction in pain, inflammation, and wound discharge. Healthy granulation tissue formation and epithelialization were noted, indicating improvement in wound healing parameters.

Conclusion: Triphaladi oil ointment may be beneficial in the management of postoperative infected wounds corresponding to *dushta vrana* and may support wound healing when used as a topical dressing.

Keywords: Surgical site infection, *dushta vrana* (infected wound), Triphala, fistulectomy, Ayurvedic wound care

1. INTRODUCTION

Postoperative wound healing is a critical determinant of surgical outcome. Surgical site infection (SSI) remains one of the most common complications following operative procedures and contributes significantly to prolonged recovery, increased healthcare costs, and patient morbidity [1]. Anorectal surgeries such as fistulectomy involve wounds that are frequently exposed to local contamination, making them particularly susceptible to delayed healing and infection [2]. Effective wound care strategies are therefore essential to promote wound bed preparation, control infection, and facilitate tissue regeneration.

In Ayurveda, wounds are broadly described under the term *vrana* (disruption of tissue continuity). Classical texts recognize various types of wounds depending on etiology and clinical presentation. When wounds become infected, contaminated, or show delayed healing, they are categorized as *dushta vrana* (infected or chronic wound) [3]. The management principles described in Ayurvedic literature emphasize sequential approaches including *vrana shodhana* (cleansing or purification of the wound) followed by *vrana ropana* (promotion of wound healing and tissue repair) [4]. These principles are considered essential for converting a contaminated wound into a healthy healing wound.

Several herbal formulations described in Ayurvedic texts are indicated for wound management due to their antimicrobial, anti-inflammatory, and tissue regenerative properties. Triphaladi oil is one such classical preparation mentioned in *Sharangadhara Samhita* for wound care. The formulation contains *Triphala*—a combination of *Haritaki* (*Terminalia chebula*), *Bibhitaki* (*Terminalia bellirica*), and *Amlaki* (*Embllica officinalis*)—along with other herbs such as *Nimba* (*Azadirachta indica*), *Haridra* (*Curcuma longa*), *Daruharidra* (*Berberis aristata*), and *Rakta chandana* (*Pterocarpus santalinus*) [5]. These medicinal plants are reported to possess antimicrobial, antioxidant, and anti-inflammatory activities that may support wound healing processes including granulation tissue formation, collagen synthesis, and epithelialization [6–8].

Although conventional antiseptic agents such as povidone iodine are widely used for wound dressing, prolonged use may sometimes cause local irritation or delayed epithelialization in certain cases [9]. In this context, traditional herbal formulations with documented pharmacological activities may provide complementary options for wound management.

The present case report describes the clinical outcome of a patient with postoperative surgical site infection following fistulectomy managed with topical application of Triphaladi oil ointment, interpreted from both Ayurvedic and contemporary wound healing perspectives.

2. CASE REPORT

A 40-year-old married female presented to the outpatient department of Shalyatantra at Dr. D. Y. Patil College of Ayurveda and Research Centre, Pimpri, Pune, with complaints of a non-healing postoperative wound in the perianal region for one month. The patient reported persistent pain, itching, and occasional serous discharge from the wound site following a fistulectomy procedure performed one month earlier at another healthcare facility.

Despite undergoing regular wound dressings and local treatment at different centers, the patient experienced minimal improvement in symptoms. Due to the persistent non-healing nature of the wound and associated discomfort, she sought Ayurvedic management.

There was no history of diabetes mellitus, hypertension, tuberculosis, or any other chronic systemic illness. The patient had no history of long-term medication use, allergies, or significant past surgical history apart from the recent fistulectomy.

The patient’s appetite, bowel habits, and sleep were reported to be normal. No significant family history relevant to the present illness was noted.

Written informed consent was obtained from the patient prior to initiation of treatment and for the use of clinical data and images for academic publication.

CLINICAL FINDINGS

On local examination, a postoperative wound was observed in the perianal region at the site of previous fistulectomy. The wound appeared open with unhealthy granulation tissue. Mild serous discharge was present along with surrounding erythema and local tenderness. The wound margins were irregular, and the surrounding skin showed signs of irritation and inflammation. The patient reported pain and itching at the wound site, which was aggravated during defecation.

There was no evidence of systemic infection such as fever or generalized malaise. Regional lymph nodes were not enlarged. Digital rectal examination did not reveal any active fistulous tract or abscess formation.

Based on the clinical features—presence of discharge, unhealthy granulation tissue, delayed healing, and local inflammation—the wound was clinically interpreted in Ayurvedic terms as *dushta vrana* (infected or contaminated wound), which is characterized by features such as *puya srava* (purulent discharge), *ruja* (pain), *kandu* (itching), and delayed wound healing as described in classical Ayurvedic texts.

DIAGNOSTIC ASSESSMENT

Clinical diagnosis was established based on patient history and local wound examination.

The patient presented with a persistent postoperative wound in the perianal region one month following fistulectomy. The wound demonstrated delayed healing with unhealthy granulation tissue, mild serous discharge, local erythema, and tenderness. These features were consistent with **surgical site infection (SSI)** of the postoperative wound.

From an Ayurvedic perspective, the wound characteristics corresponded to *dushta vrana* (infected or contaminated wound). Classical descriptions of *dushta vrana* include features such as *ruja* (pain), *kandu* (itching), *srava* (discharge), unhealthy granulation tissue, and delayed wound healing.

For objective wound evaluation, the **Bates-Jensen Wound Assessment Tool (BJWAT)** was used to assess wound status at baseline and during follow-up. This tool evaluates multiple parameters including wound size, depth, edges, necrotic tissue, exudate, granulation tissue, and epithelialization.

Table 1: Baseline Wound Assessment (Day 0)

Parameter	Observation
Wound location	Perianal region (post-fistulectomy site)
Wound type	Postoperative infected wound
Tissue type	Unhealthy granulation tissue
Exudate	Mild serous discharge
Wound edges	Irregular
Surrounding skin	Erythematous and inflamed
Pain	Present
Itching	Present

The clinical findings and wound characteristics supported the diagnosis of **post-fistulectomy surgical site infection corresponding to *dushta vrana***.

THERAPEUTIC INTERVENTION

The treatment approach focused on local wound management aimed at promoting wound cleansing and healing in accordance with the Ayurvedic principles of *vrana shodhana* (wound cleansing) and *vrana ropana* (wound healing).

Preparation of the formulation

Triphaladi oil ointment was prepared using the classical ingredients of *Triphaladi taila* processed into an ointment base to facilitate convenient topical application. The formulation was prepared in the Rasashastra and Bhaishajya Kalpana department under standard pharmaceutical conditions prescribed in Sharangadhara Samhita.

Table 2: Composition of Triphaladi Oil Ointment

Ingredient	Botanical name	Reported pharmacological properties
<i>Haritaki</i> (chebulic myrobalan)	<i>Terminalia chebula</i>	Antimicrobial, antioxidant, anti-inflammatory
<i>Bibhitaki</i> (beleric myrobalan)	<i>Terminalia bellirica</i>	Antimicrobial, anti-inflammatory
<i>Amalaki</i> (Indian gooseberry)	<i>Emblica officinalis</i>	Antioxidant, promotes tissue regeneration
<i>Nimba</i> (neem)	<i>Azadirachta indica</i>	Antibacterial, anti-inflammatory
<i>Haridra</i> (turmeric)	<i>Curcuma longa</i>	Anti-inflammatory, antimicrobial
<i>Daruharidra</i> (tree turmeric)	<i>Berberis aristata</i>	Antimicrobial
<i>Rakta chandana</i> (red sandalwood)	<i>Pterocarpus santalinus</i>	Anti-inflammatory, cooling effect

Dressing procedure

Local wound dressing was performed once daily for **21 days** following a standardized procedure:

1. The wound was gently cleaned using sterile normal saline.
2. The wound area was inspected for discharge, granulation tissue, and surrounding inflammation.
3. Triphaladi oil ointment was applied uniformly over the wound surface.
4. The wound was covered with sterile gauze dressing.

Treatment duration

Daily dressing with Triphaladi oil ointment was continued for **21 consecutive days**, with periodic assessment of wound healing parameters using the Bates-Jensen Wound Assessment Tool.

Table 3: Timeline

Time	Clinical Event
1 month prior to presentation	Patient underwent fistulectomy for fistula-in-ano at another healthcare facility.
Postoperative period	Persistent non-healing wound developed at the perianal region associated with pain, itching, and intermittent discharge.
Subsequent weeks	Patient received regular wound dressings at various centers but reported minimal improvement.

Day 0 (First visit)	Patient presented to the Shalyatantra OPD with a non-healing postoperative wound. Clinical examination suggested surgical site infection corresponding to <i>dushta vrana</i> (infected wound). Baseline wound assessment was performed.
Day 1	Treatment initiated with daily dressing using Triphaladi oil ointment.
Day 7	Reduction in pain, itching, and discharge observed. Early improvement in wound bed condition noted.
Day 14	Healthy granulation tissue formation observed with reduction in wound size and inflammation.
Day 21	Significant wound healing observed with improved epithelialization and reduction in symptoms.

FOLLOW-UP AND OUTCOMES

The patient was followed for **21 days** during which daily wound dressing with Triphaladi oil ointment was continued. Clinical progress was monitored using the **Bates–Jensen Wound Assessment Tool (BJWAT)** to objectively assess wound healing. The tool evaluates multiple wound characteristics including size, depth, edges, necrotic tissue, exudate, granulation tissue, and epithelialization. Gradual improvement was observed in wound parameters during follow-up, including reduction in discharge, decrease in inflammation, improvement in granulation tissue, and progressive epithelialization of the wound bed.

Table 4: BJWAT Score During Follow-up

Assessment Parameter	Day 0	Day 7	Day 14	Day 21
Wound size	3	3	2	2
Wound depth	3	3	2	1
Wound edges	3	2	2	1
Necrotic tissue type	2	1	1	1
Necrotic tissue amount	2	1	1	1
Exudate type	3	2	1	1
Exudate amount	3	2	1	1
Skin color surrounding wound	3	2	2	1
Peripheral tissue edema	2	2	1	1
Granulation tissue	4	3	2	1
Epithelialization	5	4	3	2

Clinical Outcome

During the course of treatment, the patient reported progressive symptomatic relief with reduction in pain and itching at the wound site. Local examination revealed gradual reduction in discharge and inflammation. Healthy granulation tissue formation was observed during the second week of treatment, followed by progressive epithelialization of the wound margins. By the end of **21 days**, the wound showed marked improvement with significant healing progression and reduction in symptoms.

3. DISCUSSION

Surgical site infection (SSI) remains a significant postoperative complication in modern surgical practice

and is associated with delayed wound healing, increased morbidity, and prolonged recovery time [1]. Procedures involving the anorectal region, such as fistulectomy, are particularly susceptible to infection due to the proximity of the surgical wound to the anal canal and its associated microbial flora [2]. Effective wound care in such cases requires not only control of local infection but also facilitation of granulation tissue formation and epithelialization to achieve satisfactory wound closure.

From an Ayurvedic perspective, wounds are described under the broad term *vrana* (disruption of tissue continuity). When a wound becomes infected, contaminated, or exhibits delayed healing, it is categorized as *dushta vrana* (infected or chronic wound) [3]. Classical Ayurvedic literature describes several characteristic features of *dushta vrana*, including *ruja* (pain), *kandu* (itching), *srava* (discharge), unhealthy granulation tissue, and delayed wound healing. These clinical features correspond closely to the manifestations of infected or non-healing wounds described in contemporary surgical literature.

The therapeutic approach to wound management described in Ayurvedic texts emphasizes a sequential strategy consisting of *vrana shodhana* (cleansing and purification of the wound) followed by *vrana ropana* (promotion of wound healing and tissue repair) [4]. Local applications of medicated oils and herbal preparations are frequently recommended in classical texts to facilitate these processes. Triphaladi oil, described in *Sharangadhara Samhita*, is traditionally indicated for wound care due to its combined cleansing and healing properties.

The formulation used in the present case contains several medicinal plants known for their pharmacological activities relevant to wound healing. *Triphala*, a combination of *Haritaki* (*Terminalia chebula*), *Bibhitaki* (*Terminalia bellirica*), and *Amalaki* (*Emblica officinalis*), has been extensively studied for its antimicrobial, antioxidant, and tissue regenerative properties. Experimental studies have demonstrated that Triphala can enhance wound contraction, increase collagen synthesis, and promote epithelialization during the wound healing process [5]. These effects are attributed to the presence of tannins, flavonoids, and phenolic compounds that contribute to antioxidant and antimicrobial activity.

In addition to Triphala, the formulation includes *Nimba* (*Azadirachta indica*), *Haridra* (*Curcuma longa*), *Daruharidra* (*Berberis aristata*), and *Rakta chandana* (*Pterocarpus santalinus*). Neem (*Nimba*) has well-documented antibacterial and anti-inflammatory effects and has been shown to inhibit the growth of several pathogenic microorganisms commonly associated with wound infections [6]. Curcumin, the principal bioactive component of *Haridra* (turmeric), is known to modulate inflammatory pathways and enhance fibroblast proliferation and collagen deposition during wound healing [7]. Similarly, berberine from *Daruharidra* exhibits antimicrobial activity and has been reported to facilitate tissue repair in infected wounds.

From the Ayurvedic pharmacodynamic perspective, many of the ingredients in the formulation possess *tikta* (bitter) and *kashaya* (astringent) tastes, which are traditionally associated with reduction of *kleda* (excess moisture) and *puya* (suppuration) in wounds. These properties may help in reducing discharge and maintaining a relatively dry wound environment conducive to healing. The presence of *katu* (pungent) taste and *ushna virya* (hot potency) in certain ingredients may further assist in improving local circulation and reducing microbial load, thereby supporting the transition of *dushta vrana* toward a healing stage.

In the present case, topical application of Triphaladi oil ointment was associated with progressive improvement in clinical parameters, including reduction in pain, itching, and wound discharge. Objective assessment using the Bates–Jensen Wound Assessment Tool demonstrated gradual improvement in wound characteristics such as granulation tissue formation and epithelialization during the follow-up pe-

riod. These observations are consistent with previously reported pharmacological effects of the constituent herbs and suggest that the formulation may support wound bed preparation and tissue repair.

Although this report describes favorable clinical outcomes, it represents a single case observation and therefore cannot establish definitive therapeutic efficacy. Further well-designed clinical studies involving larger patient populations are required to evaluate the effectiveness and reproducibility of Triphaladi oil ointment in the management of postoperative infected wounds.

Acknowledgement:

The authors acknowledge their patient, the affiliation institute and all staff involved in the clinical care of the patient.

References

1. Allegranzi B, Bischoff P, de Jonge S, Kubilay NZ, Zayed B, Gomes SM, et al. New WHO recommendations on preoperative measures for surgical site infection prevention: an evidence-based global perspective. *Lancet Infect Dis*. 2016;16(12):e276–e287.
2. Ban KA, Minei JP, Laronga C, Harbrecht BG, Jensen EH, Fry DE, et al. American College of Surgeons and Surgical Infection Society: Surgical site infection guidelines, 2016 update. *J Am Coll Surg*. 2017;224(1):59–74.
3. Sushruta. *Sushruta Samhita*. Sutra Sthana. In: Srikantha Murthy KR, translator. Varanasi: Chaukhambha Orientalia; 2012.
4. Srikantha Murthy KR. *Sushruta Samhita* (English Translation). Vol. 1. Varanasi: Chaukhambha Orientalia; 2012.
5. Peterson CT, Denniston K, Chopra D. Therapeutic uses of Triphala in Ayurvedic medicine. *J Altern Complement Med*. 2017;23(8):607–614.
6. Subapriya R, Nagini S. Medicinal properties of neem leaves: a review. *Curr Med Chem Anticancer Agents*. 2005;5(2):149–156.
7. Hewlings SJ, Kalman DS. Curcumin: a review of its effects on human health. *Foods*. 2017;6(10):92.