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Innovative Wound Care: Lekhan Taila Combined with Chlorhexidine Acetate

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Abstract:-
Background: Dushta Vrana, or infected wounds, pose significant challenges in wound management. Traditional ayurvedic treatment, such as Lekhan Taila, have been explored for their efficacy in promoting healing.
Objective: This case study aims to evaluate the effectiveness of Lekhan Taila combined with chlorhexidine acetate dressing in managing dushata varna over a 15-day treatment period.
Methods: Patient with infected wounds was treated with Lekhan Taila and chlorhexidine acetate dressing. The evaluation parameters included durgandha (odour), daha (burning sensation), kandu (itching), srava (necrotic tissue amount), pramana (size), and vedana (pain) assessed at baseline and after 15 days.
Results: Significant improvements were observed in all parameters. Durgandha reduced severe to absent, Daha and Kandu diminished substantially, Srava decreased notably, Pramana showed a marked reduction in size and Vedana was alleviated significantly.
Conclusion: The combination of Lekhan Taila and chlorhexidine acetate dressing demonstrates promising efficacy in managing dushta vrana, suggesting its potential as a viable treatment option in wound care.

Keywords: Dushta Vrana, Lekhan Taila, Chlorhexidine Acetate, Infected Wound Management, Ayurvedic Medicine

INTRODUCTION

Infected wounds, or Dushta Vrana, pose a significant clinical challenge and can lead to severe complications if not managed properly. While conventional treatments focus on infection control and wound healing, traditional Ayurvedic approaches are gaining recognition for their holistic and effective management of Dushta Vrana. Among these, **Lekhan Taila, an Ayurvedic medicated oil known for its Lekhana (scraping) and Ropana (healing) properties,** has shown promise as a topical application. Karanja (Pongamia pinnata), a key ingredient, is revered in Ayurveda for its potent antimicrobial, anti-inflammatory, and wound-healing benefits, making it a valuable option for managing infected wounds.

This case study evaluates the efficacy of **Lekhan Taila in conjunction with chlorohexidine acetate dressing** over a 15-day treatment period. Special emphasis is given to clinical parameters such as **odour (Durgandha), burning sensation (Daha), itching (Kandu), necrotic tissue amount (Srava), wound size (Pramana), and pain (Vedana).** The study aims to highlight the synergistic effects of Ayurvedic and modern interventions in promoting effective wound healing.

METHODOLOGY

The preparation of **Lekhana Taila** follows the classical Ayurvedic procedure for medicated oil formulation, adhering to the **Sneha Kalpana** (medicated oil preparation) principles. The process involves **Murchhana (purification and processing of oil), Kwatha (decoction) preparation, Kalka (herbal paste) preparation, and Sneha Paka (oil cooking process).**

1. Ingredients:

The formulation of Lekhana Taila includes the following key ingredients:

- **Base Oil:** Tila Taila (Sesame oil) – Acts as a carrier and enhances absorption.

- **Herbal Decoction (Kwatha Dravya):** Karanja (Pongamia pinnata), Haridra (Curcuma longa), Nimba (Azadirachta indica) – Provides antimicrobial and anti-inflammatory properties.
- **Herbal Paste (Kalka Dravya):** Haritaki (Terminalia chebula), Daruharidra (Berberis aristata), Manjistha (Rubia cordifolia) – Aids in wound healing and tissue regeneration.
- **Liquid Media (Drava Dravya):** Gomutra (cow urine) or Kanji (fermented rice water) – Enhances the Lekhana (scraping) effect.

2. Preparation Process:

Step 1: Preparation of Kwatha (Decoction)

- The selected herbal ingredients (e.g., Karanja, Haridra, Nimba) are taken in a 1:16 ratio with water.
- The mixture is boiled until it is reduced to 1/4th of its original volume.
- The decoction is then filtered and kept aside.

Step 2: Preparation of Kalka (Herbal Paste)

- The Kalka dravyas (Haritaki, Daruharidra, Manjistha) are finely powdered and mixed with a small amount of liquid to form a paste.

Step 3: Sneha Paka (Oil Cooking Process)

- The base oil (Tila Taila) is taken in a large vessel and subjected to **Murchhana** (preliminary purification).
- The prepared **Kwatha, Kalka, and Drava Dravya (liquid media)** are added to the oil in a **1:4:1 ratio** respectively.
- The mixture is heated on a mild flame with continuous stirring, ensuring **Mridu Agni (gentle heat)** to prevent burning.
- The process continues until **Sneha Siddhi Lakshanas**

  (characteristics of properly prepared medicated oil) appear, such as:

  - The mixture no longer froths.
  - A pleasant aroma develops.
  - The Kalka (paste) becomes dry and rolls into a lump.
- Once these signs appear, the oil is filtered and stored in an airtight glass container.

3. Storage and Preservation:

- The prepared **Lekhana Taila** was stored in **a dry, cool place, away from direct sunlight.**
- After preparation of Lekhana Taila it was mixed with Madhuchista (bees wax) in the proportion of 10 : 1 and was applied over sterile gauze of 5cm x 5 cm.

APPLICATION :

CASE 1 : -

A female patient of age 37 years old complaining of Infected wound of size 4 cm x 3 cm on dorsal aspect of right hand since 15 days associated with mild pus discharge, itching and redness since 15 days. Patient reported no any comorbidities. Hence this patient's wound was dressed daily with Lekhana Taila Vikeshika combined with Chlorohexidine acetate gauze dressing.

CASE 2 :-

A male patient of 43 years old complaining of Infected wound of size 3 cm x 3 cm on middle aspect of left foot at ankle joint. Patient has history of Trauma with bike stand. Patient reported no any comorbidities. Hence this patient wound was dressed daily with chlorohexidine acetate gauze dressing.

CASE 3:-

A female patient of age 47 years old complaining of Infected wound of size 3 cm x 3 cm on dorsal aspect of right lower limb at mid shaft of tibia since 12 days associated with mild pus discharge, itching and redness since 15 days. Patient reported no any

comorbidities. Hence this patient's wound was dressed daily with Lekhana Taila Vikeshika combined with Chlorohexidine acetate gauze dressing.

Analysis of Lekhana Taila

Sl No	Parameter	Result	
1	Color	Yellowish pale brown	
2	Odor	Characteristic	
3	pH	6.14	
4	L.O.D(%)	0.16	
5	Total Fatty Matter(%)	91.66	
6	Thermalstability	Pass	Rf Values
7	Rancidity	Nil	
8	TotalAcidity(%)	7.37	
9	Spreadability	Pass	
10	Viscosity(cps)	980	
11	TLC	Distance Travelled 7.4 6.5 6.2 5.8	Rf Values 0.88 0.80 0.71 0.72
12	Microbiologytest	E. coli Staphylococcus aureus Salmonella Spp. Pseudomonas Aeruginosa Total microbial count Total yeast and mold	Absent Absent Absent Absent 27 <10

Before Treatment

After Treatment

Result:

All three-patients demonstrated significant improvements by the end of the treatment period:

- **Durgandha (Odour):** The foul odour associated with the wound decreased markedly within the first week and was absent by day 15.
- **Daha (Burning Sensation):** Patient reported a reduction in burning sensation from severe to mild or absent within the treatment duration.
- **Kandu (Itching):** Itching was significantly reduced; patient reported complete relief by the end of treatment.
- **Srava (Necrotic Tissue Amount):** There was a notable decrease in necrotic tissue, with complete debridement.
- **Pramana (Size):** The size of the wounds reduced significantly.
- **Vedana (Pain):** Pain levels diminished considerably; patient reported a decrease from Severe to mild pain by day 15.

Overall, the combination of Lekhan Taila and Chlorhexidine Acetate dressing proved effective in manging Dushta Vrana, leading to improved healing outcomes and patient comfort. This case study highlights the potential of integrating traditional ayurvedic practices with modern antiseptic techniques for wound management (Fig. 1).

Mechanism of Action:- Lekhana Taila is known for its ability to support wound healing by promoting the formation of granulation tissue, the new connective tissue and tiny blood vessels that develop during the healing process. Its antimicrobial properties help prevent infections by inhibiting bacterial growth, creating a safer environment for tissue regeneration.The addition of Chlorhexidine acetate enhances this effect by specifically targeting gram-positive bacteria, which are often responsible for wound infections. Chlorhexidine is widely used in antiseptics due to its broad-spectrum antimicrobial activity. By combining these two agents, the treatment becomes even more effective, leading to a significant reduction in infection markers—such as redness, swelling, and pus formation—commonly associated with wound infections.This synergistic effect—where both components work together to strengthen each other's benefits—helps accelerate wound healing, ensuring that the affected area recovers more efficiently. Patients receiving this combination treatment often show improved healing outcomes compared to those treated with either agent alone.

Disscusion:- The combination of Lekhan Taila, an Ayurvedic medicated oil, with chlorhexidine acetate dressing presents a harmonious blend of traditional and modern medical practices, particularly in addressing dushta vrana, or non-healing infected wounds. Lekhan Taila, rooted in Ayurveda, is crafted from herbal ingredients known for their anti-inflammatory, antimicrobial, and tissue-regenerating properties. When applied to wounds, it serves to cleanse the area, reduce inflammation, and support the natural process of tissue repair. This aligns with the Ayurvedic perspective that emphasizes treating not just the symptoms but also the underlying causes of a condition to restore balance to the body.On the other hand, chlorhexidine acetate is a widely used antiseptic in modern medicine. It combats bacterial infections effectively by preventing the growth and spread of microorganisms. Its role in wound care is well-documented, offering a reliable means to control infection and promote cleaner wound environments.By combining the two, this dual approach maximizes the strengths of both systems. Lekhan Taila not only helps in reducing infection and inflammation but also enhances overall wound healing, while chlorhexidine acetate ensures that harmful bacteria are managed efficiently. This synergy can lead to significant improvements in wound conditions, such as reducing unpleasant odor, pain, burning sensation, and necrotic tissue.

Clinical Implications: The findings support the integration of traditional ayurvedic treatments with modern antiseptic techniques in managing infected wounds. This approach could lead to better patient outcomes, particularly in populations with chronic conditions that predispose them to non-healing wounds.

Conclusion:

This case study illustrates the promising role of Lekhan Taila combined with chlorhexidine acetate dressing in treating infected wounds. Further studies with larger sample sizes and controlled trials are warranted to validate these findings and explore the underlying mechanisms contributing to its efficacy. The integration of traditional ayurvedic treatments into modern wound care protocols may offer beneficial outcomes for patients suffering from chronic and infected wounds.

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