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Ayurvedic management of *Vranashopha* w.r.t. Cellulitis: A Single Case Study

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ABSTRACT

Cellulitis is a spreading inflammation of dermis and subcutaneous tissue. It is commonly due to *Streptococcus pyogenes* and gram positive organisms. These organisms usually gain access through a wound or scratch. It is generally treated with Antibiotics, anti-inflammatory, antipyretic and analgesic medications. The disease can progress and complicates to Abscess formation, gangrenous cellulitis or necrotizing fasciitis. *Vrana Shopha* can be associated with Cellulitis. According to *Ayurveda*, *Ekadasha/Saptopakrama* treatment have been explained. A 36 year old male Right hemiplegic patient presented with indurated swelling and redness over lateral aspect in Right foot region & was treated with *Chedana Karma*, *Lepana* and *Shamana Aushadi*, where he showed good progression in this condition.

Key words: *Vranashopha*, *Cellulitis*, *Lepana*, *Surgical Debridement*.

INTRODUCTION

Cellulitis is a non-suppurative spreading inflammation of dermis and subcutaneous tissue that is usually caused by bacterial infection like *Streptococcus pyogenes*, *Staphylococci pyogenes* and gram positive organisms. These organisms usually gain access through a wound or scratch or insect bite. The organisms on skin and its appendages gain entrance to dermis and multiply to cause Cellulitis.^[1] The prevalence rate of cellulitis is 24.6 per 1,000 person. The most common site of infection was lower extremity (39.9%), Face and Scrotum.^[2] Diabetes,

Cancer and Immuno-compromised persons are the risk factors for Cellulitis. The main cardinal signs of cellulitis are Pain, erythema, swelling, warmth with other symptoms like fever, malaise and chills. Most common complications are Abscess formation, gangrenous cellulitis or necrotizing fasciitis. Based on the symptoms cellulitis is treated with Antibiotics, anti-inflammatory, antipyretic, analgesics, limb elevation and if necessary debridement.^[3]

According to *Ayurveda*, *Vranashopha* can be associated with Cellulitis. The definition of *Shopha* given by *Acharya Sushruta* is a localised swelling in part of the body involving *Twak* and *Mamsa Dhatu* which may be even or uneven, massive and knotty in consistency.^[4] It is the prodromal stage of *Vrana*. The *Samanya Lakshana* are *Gaurava* (Heavyness), *Anavasthitva* (Mobile), *Utsedha* (Swelling), *Ushama* (Heat), *Siratanutva* (Increases vascular permeability), *Romaharsha* (Horripilation) and *Vivarnata* (Discoloration).^[5]

Acharya Sushruta while explaining the treatment aspect of *Vranashopha* he has told *Ekadasha* and *Saptopakrama*.^[6] Among them *Patana* (*Chedana*) and *lepa* places an important role in the management of

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Cellulitis as it may alleviate local inflammation, temperature, edema and redness. So, *Chedana* and *Lepa* were chosen for this study to treat cellulitis.

CASE REPORT

Chief Complaints

C/O Indurated swelling and redness over lateral aspect of Right foot since 2 days. Associated with fever since 2 days.

History of Present Illness

A 36 year old male N/K/C/O T2DM, Hypertension, Thyroid disorders on 10-06-2024 morning had a sudden fall in his washroom with loss of consciousness for 5 min followed by slurred speech for few minutes, later he developed loss of strength in Right upper and lower limb was approached to Hubli hospital for treatment and was bedridden. On 26-06-2024 patient attender noticed swelling and redness over lateral aspect of Right foot associated with Fever. As patient didn't find any improvement approached Kayachikitsa department of SJG Ayurvedic Medical College and Hospital for *Pakshagata* treatment and he was referred to Shalya Tantra department for management of swelling in Right foot.

History of Past Illness

No H/O T2DM, Hypertension, Thyroid disorder or any other comorbidities.

Examination of Patient

Personal History

- Diet - Mixed
- Appetite - Poor
- Bowel - Constipated
- Micturition - 4-5 times a day
- Sleep - Sound
- Habits - Tobacco chewing, Smoke, Alcohol since 10 years.

Vitals

BP - 120/80 mmHg

Respiratory rate - 18 cpm

Pulse rate - 72bpm

Temperature - 99.8°F

Systemic Examination

- CVS - S1 S2 Heard, No murmurs.
- RS - Equal air entry B/L Lung fields, NVBS +
- P/A - Soft, Non tender, No organomegaly.

Examination of Foot

- Swelling over Right lateral malleolus region extending from Right ankle to foot
- Reddish Discoloration over Right lateral malleolus region
- On Palpation: Raised temperature over the swelling
- Induration over lateral aspect of ankle joint
- Tenderness + + over induration part

Table 1: Examination of Ulcer

After 1 st Surgical Debridement	After 2 nd Surgical Debridement
<p>Inspection</p> <ul style="list-style-type: none"> Site: Right lateral malleolus Size: 2 x 2cm Shape: Oval Discharge: Seropurulent Edge: Punched out Floor: Covered by thick slough Margin: Irregular, inflamed and oedematous Foul smell: Present Surrounding area: erythematous swelling <p>Palpation</p> <ul style="list-style-type: none"> Local Temperature: Raised 	<p>Inspection</p> <ul style="list-style-type: none"> Site: Right lateral malleolus Size: 6 x 8cm Shape: Oval Discharge: Serous Edge: Punched out Floor: dull, dusky red granulation < 25% of wound Margin: Irregular, inflamed and oedematous Foul smell: Absent Surrounding area: erythematous swelling <p>Palpation</p> <ul style="list-style-type: none"> Local Temperature: Raised

<ul style="list-style-type: none"> Tenderness: Present in and around the wound Induration: Present in and around the wound Base : lateral malleolus of Fibula Pulsation: dorsalis pedis felt feeble, Anterior and Posterior tibial artery felt well. No distal neuro-vascular deformity. 	<ul style="list-style-type: none"> Tenderness: Present in and around the wound Induration: Present in and around the wound Base : lateral malleolus of Fibula Pulsation: dorsalis pedis, Anterior and Posterior tibial artery felt well. No distal neuro-vascular deformity.
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Investigation [Date: 01-07-2024]

Hb: 15.2 g/dl

TC: 13,700 Cells/Cu mm

Platelet count: 4.82 Lacks/cumm

RBS: 127 mg/dl

ESR: 55 mm/hour

HIV: Non Reactive

HCV: Non reactive

HBSAG: Negative

Diagnosis : Vranashopha

Treatment

Table 2: Treatment timeline

Date	Procedure
29-06-2024 to 30-06-2024	Dashanga Lepa BD
01-07-2024	1 st Chedana Karma (Surgical Debridement)
02-07-2024 to 04-07-2024	Nimba Patra Kalka over the wound for 6 hours and Dashanga Lepa around the wound for 1 hour, Dressing with Jatyadi Taila
05-07-2024	2 nd Chedana Karma (Surgical Debridement)
06-07-2024 to 11-07-2024	Nimba Patra Kalka over the wound for 6 hours and Dashanga Lepa surrounding the wound for 1 hour, Dressing with Jatyadi Taila.

Oral medication

Amrutottara Kashaya 15ml TID AF for 8 days.

Later Guggulu Tiktaka Kashaya 15ml TID AF, Tab.Triphala Guggulu 1 TID AF and Tab. Gandhaka Rasayana 1 TID AF for 15 days.

Limb elevation.

Assessment

Table 3: Assessment of parameters

Parameters	Day 1 (Before Treatment)	Day 3 (After 1 st Chedana)	Day 7 (After 2 nd Chedana)	Day 14	Day 28	Follow up after 45 days
Pain	10	8	5	3	2	0
Size	-	2x2	6 x 8	4x6cm		2x2
Depth	-	0.5	1	1	0.5	0.5
Granulation tissue	-					
Discharge	Grade 5 Purulent	Grade 4 Serous	Grade 3 serosanguineous	Grade 1	Grade 1	Grade 1
Peripheral tissue edema	Grade 4 Pitting edema <4cm around wound	Grade 3 Non pitting edema >4cm	Grade 2 Non pitting edema <4cm	Grade 2	Grade 1 No swelling or edema	Grade 1
Peripheral tissue	Grade 5	Grade 4	Grade 3	Grade 2	Grade 1	Grade 1

Induration	Induration >4cm in any area around wound	Induration 2-4cm extending around wound	Induration 2-4cm extending <50% around wound	Induration <2cm around the wound	None present	None present
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Wound assessment done according to Bates-Jessen wound assessment tool^[7] and for Pain VAS^[8] scale was used.

Table 4: Granulation tissue

Grade 1	Skin intact or partial thickness wound
Grade 2	Bright, beefy red; 75% to 100% of wound filled &/or tissue overgrowth
Grade 3	Bright, beefy red; < 75% & > 25% of wound filled
Grade 4	Pink, &/or dull, dusky red &/or fills < 25% of wound
Grade 5	No granulation tissue present

Table 5: Discharge

Grade 1	None
Grade 2	Bloody
Grade 3	Serosanguineous: thin, watery, pale red/pink
Grade 4	Serous: thin, watery, clear
Grade 5	Purulent: thin or thick, opaque, tan/yellow, with or without odor

Table 6: Peripheral tissue edema

Grade 1	No swelling or edema
Grade 2	Non-pitting edema extends <4 cm around wound
Grade 3	Non-pitting edema extends >4 cm around wound
Grade 4	Pitting edema extends < 4 cm around wound
Grade 5	Crepitus and/or pitting edema extends >4 cm around wound

Table 7: Peripheral tissue induration

Grade 1	None present
Grade 2	Induration, < 2 cm around wound
Grade 3	Induration 2-4 cm extending < 50% around wound
Grade 4	Induration 2-4 cm extending > 50% around wound
Grade 5	Induration > 4 cm in any area around wound

Table 7: Pain

Grade 0	No pain
Grade 1-3	Mild pain
Grade 4-6	Moderate pain
Grade 7-9	Severe pain
Grade 10	Worst pain



Fig. 1: Day 1



Fig. 2: After 1st Chedana Karma

Fig. 3: After 2nd Chedana Karma

Fig. 4: Application of Nimba Kalka over the wound and Dashanga Lepa around the wound



Fig. 5: On day 14



Fig 6: After 45days

DISCUSSION

Vranashopha is managed in early stages to avoid more tissue damage. *Acharya Sushruta* has described management required for different stages of *Vranashopha* in *Saptopakrama*: Like in *Amavastha* the *Upakrama* told are *Vimlapana* (massage or rubbing over swelling), *Avasechana* (Blood letting), *Upanaha* (Poultice). In *Pakwawastha*, *Patana* (Draining or incising), For *Vrana Chikitsa*: *Shodhana* (Cleaning) and *Ropana* (Healing) are told. Later *Vaikritapaha* (Repairing the scar) has been mentioned.^[9] As *Acharya Sushruta* has said if *doshas* are eliminated in stage of accumulation itself, the disease will not progress to further stages. So in this case when the *shopha* was noticed, *Dashanga Lepa* was applied to make *Shopha* from *Amavastha* to *Pakwavastha* later *Chedana Karma* (surgical debridement) was done to drain out all pus and slough. After *Chedana Kriya*, for *Vrana Chikitsa-Nimba Kalka* was applied over the wound and *Dashanga Lepa* surrounding the wound followed by Wound dressing with *Jatyadi Taila*.

In this case after application of *Dashanga Lepa*, *Shotha* turned to *Pakwavastha* so *Chedana Karma* (Surgical debridement) was planned. In 1st *Chedana Karma*, during the procedure patient couldn't tolerate the pain and he was anxious, even his vitals went above the normal range, so *Chedana Karma* was not done completely. For 3 days *Nimba Patra Kalka* over the wound and *Dashanga Lepa* application surrounding the wound was done, then again he was took for 2nd *Chedana Karma* and thorough surgical debridement was done with all vital within the normal range. After this, the granulation tissue was seen developing over wound floor.

Chedana Karma comes under *Patana* which is one among the *Ashtavidha Shastra Karma*. It is absolute indication in *Pakwavastha Vranashopha*. It drains the collected exudates & pus from the cavity, which helps in wound healing. *Dashanga Lepa*.^[10,11] reduces Inflammatory edema as most of the ingredients are *Kashaya* and *Tikta Rasa* so it allivates vitiated *Kapha* and due to *Sheeta Virya* it constricts blood vessels & reduces erythema.

Nimba Patra^[12] has *Tikta Kashaya Rasa* and is both *Shodhana* and *Ropana*, it reduces itching, foul smell and acts as antimicrobial helps in healing the wound faster.

Jatyadi Taila^[13] is *Shothahara*, *Vedanasthapana* and *Vrana Shodaka & Ropaka*. It has *Tikta*, *Madhura*, *Katu Rasa* and *Ushna Veerya* which helps in wound healing.

Internally *Amrutottara Kashaya* 15ml TID AF for first 8 days was given later *Guggulu Tiktaka Kashaya* 15ml TID AF, Tab. *Triphala Guggulu* 1 TID AF and Tab. *Gandhaka Rasayana* 1 TID AF for 15 days was given. *Amrutottara Kashaya*^[14] is having properties like Antipyretic, anti-inflammatory and anti-bacterial. *Triphala Guggulu*^[15] has *Dahasamana*, *Vedanahara*, *Vrana Sodhana* and *Ropana* properties. It is *Tridoshagna*, it also has anti-inflammatory and anti-microbial action. *Acharya Vagbhatta* has mentioned *Triphala Guggulu* as *Agryaaushadha* for *Vrana*. *Gandhaka Rasayana* [16] is *Tidoshashamaka*, *Vatamaya Nivaraka*, *Agnivardhaka* and *Shoolahara*. It has anti-inflammatory, anti-bacterial action and is also said to promote wound healing.

CONCLUSION

Acharya Sushruta has explained the management of every stages of *Vranashopha* in detailed. *Vranashopha* results in vitiation of *Tridosha*. In *Vranashopha*, *Avastha Chikitsa* should be followed. Here in *Amavastha*, *Lepa* was used to make it *Pakwavastha*, *Chedhana* was used in *Pakwavastha* to drain out all pus and Dressing with *Jatyadi Taila* was used to heal *vrana* by achieving granulation tissue. All these *Lepana*, *Chedana Karma*, *Ropana* are indicated in *Saptopakrama*. An early intervention should be done in view of early suppuration and prevention of further complications.

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