

## A CRITICAL REVIEW: APPLICATION OF SASTHI UPAKRAMA IN MODERN ERA

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### ABSTRACT

A Wound or Ulcer is a discontinuation in the integrity of the skin or tissues, or mucous membrane which may be associated with disruption of the structure and function of any tissues or soft tissue or bone or internal organs. Wound or Ulcer can be congruent with *Vrana* in *Ayurveda*. In modern medical science, the healing process of Wound is a natural process, which also starts immediately after injury as four healing process in haemostasis, inflammation, proliferation and maturation phase. The management of *Vrana* has been illustrated in *Sushrutasamhita* by *AcharyaSusruta* as sixty *upakrama* which is known as *Shashtiupakrama* in *Chikitsasthana*.

**Keyword:** *Sushrutasamhita*; *Shastiupakram*; *Shaptopakrama*; *Vrana*; Wound; Ulcer

### INTRODUCTION

The *Vrana* or Wound is primary or initial presence in any kind of surgical cases. So, in any kind of surgery, there is a common thing that is *Vrana*. A Wound or *Vrana* is a discontinuation in the integrity of the skin or tissues, or mucous membrane<sup>1,2</sup>. There are various kind of wound management is advocated in modern medical science whereas the management of *Vrana* has been illustrated in *Sushrutasamhita* in very detail manner which is known as *shashtiupakram*<sup>3,4</sup>. *Vrana* and its management are of prime importance in surgi-

cal practices. Generally, a *vrana* created by a surgeon is healed by primary intention, but there are many other types, which follow secondary stages of healing. The concept of *sasthiupakrama* can be applied in modern era in the cosmetic field, as promoting the normalcy of the healed wound as well as restoring the normal skin texture by removing scar mark<sup>5</sup>, the management of hyper pigmented and hypo pigmented patches,<sup>6</sup> acne vulgaris, alopecia aristata,<sup>7</sup> excess hair remove<sup>8</sup>, as well as other pathological conditions like

the management of mouth or oral ulcer<sup>9</sup>, draining and cleaning the pus pocket of the abscess, cease the supuration and healing the abscess<sup>10</sup>, maintaining the sterilization and hygiene as well as promoting the aseptic environment to devoid of further secondaryinfection<sup>11</sup>.All measures in detail has been illustrated properly in *sasthi-upakrama* which is highly acceptable for management of wound or ulcer and cosmetic correction in modern era.

Hence here an attempt is made to analysis of the application of *Sasthi-upakrama* in modern era.

**AIM AND OBJECTIVE:**

1. To evaluate, elaborate and discuss the various surgical concepts of *Shashtiupakrama* of *Sushruta Samhita*.
2. To understand the basic principle of wound management.
3. Critically analysis the application of *sasthi-upakrama* with modern medical science

**MATERIAL AND METHOD:**

All reference of *Shashtiupakrama* are collected and compiled from various modern textbooks of surgery, *sushrutasmahita* and other *Ayurvedic* classics.

**LITERATURE REVIEW:**

The specific concept of the origin and development of wound has been taken from the text of a scholarly paper, which includes the current knowledge including substantive findings, as well as theoretical and methodological contributions to a particular topic from the following literature-

- SRB’s Manual of Surgery, 1<sup>st</sup> chapter, Wound

- Manipal Manual of surgery, 1<sup>st</sup> chapter, Wound

The specific concept of the origin and development of *vrana* has been taken from the text of a scholarly paper as well as theoretical and methodological contributions to a particular topic from the following literature-

- *Susrutsamhita, sutrssthana*, chapter 17<sup>th</sup>*AmapakavaisaniyaAdhyay*

- *Susrutsamhita, chikitshasthana*, chapter 1<sup>st</sup>, *Dvivarniyachikitsha*

**OBSERVATION:**

<i>SASTHI-UPAKRAMA</i>	<b>MECHANISM OVER WOUND/VRANA</b>
1) <i>APATARPANA</i>	<p>Making the body thin by <i>Apatarpana</i>/fasting</p> <p style="text-align: center;">↓</p> <p>Mitigating the severity of aggravasion of the <i>doshas</i>.</p> <p style="text-align: center;">↓</p> <p>Mitigating <i>srotaavarodha</i> which is obstructed by aggravated <i>doshas</i>.</p> <p style="text-align: center;">↓</p> <p>Thus mitigating <i>sopha</i> or Swelling.</p>
2) <i>ALEPA</i>	<p>Swelling which are just arising and in wound having severe pain, <i>Alepa</i> applying.</p> <p style="text-align: center;">↓</p> <p>cleaning the wound by <i>shodhana</i> property</p> <p style="text-align: center;">↓</p> <p>By <i>Ropana</i> property filling the wound by granulation tissues and epithelial layers</p> <p style="text-align: center;">↓</p> <p>Healing the wound by <i>Ropana</i> property</p>

	<p style="text-align: center;">↓</p> <p>Mitigating <i>sopha</i> or swelling</p> <p style="text-align: center;">↓</p> <p>Thus mitigating the pain quickly and providing comforts</p>
3) <b>PARISHEKA</b>	<p>Mitigating the pain of the wound.</p> <p style="text-align: center;">↓</p> <p>Beneficial to mitigating <i>sopha</i> or swelling</p> <p><b>Example of <i>drabya</i> using for <i>Pariseka</i>: <i>Sarpi, Taila, Dhyanamla</i>, Milk, Sugar-cane juice</b></p>
4) <b>ABHYANGYA</b>	<p>Oil bath to the swollen part mitigates the aggravation of <i>dosas</i></p> <p style="text-align: center;">↓</p> <p>Bestows softness by reducing the indurated base of the wound or ulcer.</p> <p style="text-align: center;">↓</p> <p>Mitigating <i>sopha</i> or swelling.</p>
5) <b>SWEDA</b>	<p>Reduce dry, roughness</p> <p style="text-align: center;">↓</p> <p>Reduce hardness of wound</p> <p style="text-align: center;">↓</p> <p>Reducing indurated base of ulcer or <i>vrana</i>.</p> <p style="text-align: center;">↓</p> <p>Mitigating <i>sopha</i> or swelling</p> <p style="text-align: center;">↓</p> <p>Mitigating the pain</p>
6) <b>VIMLAPANA</b>	<p>Reducing immovability of wound.</p> <p style="text-align: center;">↓</p> <p>Mitigating <i>sopha</i> or swelling.</p> <p style="text-align: center;">↓</p> <p>Mitigating the pain</p>

7) <b>UPANAHA</b>	<p>Making immature (unripe) wound to mature ( stage of ripening) and ripening wound to ripens (forming pus) quickly.</p> <p style="text-align: center;">↓</p> <p>Mitigating <i>sopha</i> or swelling</p>
8) <b>PACHANA</b>	<p>Making the immature wound ripen.</p> <p style="text-align: center;">↓</p> <p>Mitigating <i>sopha</i> or swelling.</p> <p><b>Example of drabya using for Pacana:</b> Curd ,Buttermilk, <i>Sura</i></p>
9) <b>VISRAVANA</b>	<p>Reducing exudation of pus or ripening</p> <p style="text-align: center;">↓</p> <p>Reducing the bleeding from wound</p> <p style="text-align: center;">↓</p> <p>Making soft the hard indurated base of the ulcer</p> <p style="text-align: center;">↓</p> <p>By <i>Shodhana</i> property, purifying or cleaning the infected or septic wound or in wound,having the presence of poisons.</p> <p style="text-align: center;">↓</p> <p>Mitigating <i>sopha</i> or swelling.</p> <p style="text-align: center;">↓</p> <p>Mitigating the pain</p>
10) <b>SNEHA</b>	<p>Mitigating the dryness.</p> <p style="text-align: center;">↓</p> <p>Mitigating <i>sopha</i> or swelling</p> <p><b>Example of drabya using for Sneha:</b> <i>Taila, Gheeta</i></p>
11) <b>VAMANA</b>	<p>Pacify the wound which is having the elevation of muscles, clotted blood, means floor of the ulcer is full of slough</p> <p style="text-align: center;">↓</p> <p>Alleviating swelling which is having aggravation of <i>kapha</i></p>
12) <b>VIRECHANA</b>	<p>Mitigating <i>Vata</i> and <i>pitta</i> aggravation</p> <p style="text-align: center;">↓</p> <p>Reducing the <i>sopha</i> or swelling.</p>

13) <b>CHEdana</b>	In wound which is immature or unripe, hard and static and suppuration forming from ligaments- ideal to <i>chedana</i> or exising and remove the dead tissues.
14) <b>BHEdana</b>	In wounds which having pus inside but not having an opening,even having sinuses inside or pus pocket –ideal to <i>bhedana</i> or splitting and draining the accumulated pus.
15) <b>DARANA</b>	Promoting bursting by local application
16) <b>LEKHANA</b>	<i>Lekhana</i> or scrapping useful for implicating from edges to the level of the floor of the wounds which are hard, having thick and round edges which burst often with hard and elevated muscles, means floor is full of slough . <b>Example of Drabya using for Lekhana</b> :coarse linen cloth, thick cotton cloth, <i>phena</i> , alkali
17) <b>ESHANA</b>	In wounds which is having straight or curved sinuses, having foreign bodies slowly bulging up, <i>Eshana</i> or Probing should be done. <b>Example of Drabya using for Eshana</b> : <i>karira</i> ,hair ,finger
18) <b>AHARANA</b>	Foreign body is extracted from the wound
19) <b>VYADHANA</b>	Puncturing should be done by sharp instruments
20) <b>VISRAVANA</b>	Accumulated pus drained out by <i>Visravana</i>  ↓ Pacify the accumulated vitiated <i>doshas</i> around the wound  ↓ Mitigating the pain  ↓ Mitigating <i>sopha</i> or swelling.
21) <b>SIVANA</b>	Wounds which are free from ripening or suppuration, localised in the muscle and having wide opening- edges of wound should be sutured and repaired.
22) <b>SANDHANA</b>	Wounds which are free from ripening or suppuration, localised in the muscle and having wide opening- edges of wound should be sutured and repaired as same like <i>Sandhana karma</i> .
23) <b>PIDANA</b>	Wounds which have pus inside ,having small opening and situated on <i>Marma</i> , should be squeezed by applying warm poultices which is not dried up.
24) <b>SONITA-STHAPANA</b>	When excessive amount of blood oozing out from wound ,various methods of sonita sthapana should obtain to cease the bleeding.

<p>25) <b>NIRVAPANA</b></p>	<p>Alleviating the accumulated vitiated <i>pitta dosha</i> around the wound by cold potency drugs are applying in <i>Nirvapana</i></p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Mitigating the pain</p> <p><b>Example of Drabyausing for Nirvapana:</b> cold property drugs macerated with milk, <i>ghee</i>.</p>
<p>26) <b>KASAYA-</b></p>	<p>By <i>Sodhana</i> property, <i>Kasaya</i> cleansing the wound</p> <p style="text-align: center;">↓</p> <p>By <i>Ropana</i> property, <i>Kasaya</i> healing the wounds <i>Sodhana, Ropana</i> property</p>
<p>27) <b>VARTI-</b></p>	<p style="text-align: center;">Mitigate the Aggravation of <i>Doshas</i></p> <p style="text-align: center;">↓</p> <p>By <i>Sodhana</i> property, application of <i>Varti</i> ,cleansing the wound</p> <p style="text-align: center;">↓</p> <p>By <i>Ropana</i> property, <i>Varti</i> healing the wounds</p>
<p>28) <b>KALKA-</b></p>	<p>By <i>Sodhana</i> property, application of <i>Varti</i> ,cleansing the wound</p> <p style="text-align: center;">↓</p> <p>By <i>Ropana</i> property, <i>Varti</i> healing the wounds <i>Sodhana, Ropana</i> property</p>
<p>29) <b>SARPI-</b></p>	<p style="text-align: center;">Pacify the Suppuration from wound</p> <p style="text-align: center;">↓</p> <p>By <i>Sodhana</i> property, application of <i>Sarpi</i>,cleansing the wound</p> <p style="text-align: center;">↓</p> <p>By <i>Ropana</i> property, <i>Sarpi</i> healing the wounds <i>Sodhana, Ropana</i> property</p> <p><b>Example of Drabya using for Sarpi:</b> fruit of <i>karpasha</i></p>
<p>30) <b>TAILA-</b></p>	<p>By <i>Sodhana</i> property, application of <i>Taila</i>,cleansing the wound</p> <p style="text-align: center;">↓</p> <p>By <i>Ropana</i> property, <i>Taila</i> healing the wounds <i>Sodhana</i></p>
<p>31) <b>RASAKRIYA</b></p>	<p>By <i>Sodhana</i> property, <i>Rasakriya</i> cleansing the wound</p> <p style="text-align: center;">↓</p> <p>Reducing the immobility of the indurated base of the ulcer</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">reducing the slough in floor of the wound</p> <p><b>Example of Drabya using for Rasakriya:</b> <i>kasisa, manassila, haritala</i></p>

32) <b>AVACHURNANA</b>	By <i>Sodhana</i> property, <i>Avachunana</i> cleansing the wound
33) <b>ROPANA</b>	<i>Ropana</i> property healing the wound
34) <b>VRANA DHUPANA</b>	<p>Alleviate <i>Vata dosha</i> which predominance in wound</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Mitigate the pain</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Reduce the exudation</p> <p><b>Example of <i>Drabya</i> using for <i>Dhupana</i>: ksauma, yava, ghee</b></p>
35) <b>UTSADANA</b>	<p>Promoting grannulation tissue and healthy epithelium layers</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Promoting the Shelving of the edges of the healed ulcer</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Removing the scar marks of the healed wound</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Providing the restoration of the normalcy to the healed wound scar marks</p> <p><b>Example of <i>Drabya</i> using for <i>Utsadana</i>: medicated <i>ghee</i>, meat.</b></p>
36) <b>AVASADANA</b>	<p>Promoting healing and eliminating of the dead tissues of the elevated floor of the wound</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Promoting the Shelving of the edges of the healed ulcer</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Removing the scar marks of the healed wound</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Providing the restoration of the normalcy to the healed wound scar marks</p> <p><b>Example of <i>Drabya</i> using for <i>Avasadana</i>: <i>Churna</i>, honey</b></p>
37) <b>MRIDU KARMA</b>	<p>Reducing the induration of the wound</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Providing softness to the wound</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Removing the scar marks of the healed wound</p> <p style="text-align: center;">↓</p>

	<p>Providing the restoration of the normalcy to the healed wound scar marks.</p> <p><b>Example of <i>Drabya</i> using for <i>Mridukarma</i>:</b> bathing with oils and liquid and bandaging tightly.</p>
38) <b>DARUNA KARMA</b>	<p>Promoting grannulation tissue and healthy epithelium layers to make Very soften wound to hard or properly healed.</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Removing the scar marks of the healed wound</p> <p style="text-align: center;">↓</p> <p>Providing the restoration of the normalcy to the healed wound scar marks</p> <p><b>Example of <i>Drabya</i> using for <i>Utsadana</i>:</b>bark of <i>dhava, priyangu, asoka, rohini, triphala, dhatakipushpa, rodhra, sarjarasa</i>.</p>
39) <b>KSHARA KARMA</b>	<p>Reducing the muscular growth and hardness of wound</p> <p style="text-align: center;">↓</p> <p>Purifying or cleansing the wound</p>
40) <b>AGNIKARMA</b>	<p>Excision done by thermal cuaterisation</p> <p style="text-align: center;">↓</p> <p>Reduce secretion from the wound</p>
41) <b>KRISHNA KARMA</b>	<p>Promoting proper healing to the improper healed wound which is having white scar mark</p> <p style="text-align: center;">↓</p> <p>Providing the restoration of the normalcy to the healed wound scar marks</p> <p><b>Example of <i>Drabya</i> using for <i>Krishnakarma</i>:</b> <i>bhallatakataila</i></p>
42) <b>PANDU KARMA</b>	<p>Promoting proper healing to the improper healed wound which is having dark scar mark</p> <p style="text-align: center;">↓</p> <p>Providing the restoration of the normalcy to the healed wound scar marks</p> <p><b>Example of <i>Drabya</i> using for <i>Pandu-karma</i>:</b><i>rohiniphalapaste, vetasa, sarja, kasisa</i> and <i>madhuka</i> with honey apply.</p>
43) <b>PRATISARANA</b>	<p>Removing the scar mark entirely</p> <p style="text-align: center;">↓</p> <p>Promoting and Restoring the normal colour of the skin</p> <p><b>Example of <i>Drabya</i> using for <i>Pratisarana</i>:</b> equal part of shell of hen's egg, oyster cell, <i>kataka, madhuka</i> and ash of precious stones with cow's urine apply</p>



44) <b>ROMA-SANJANANA</b>	Promoting the hair growth to the healed and restored skin  <b>Example of Drabya using for Romasanjana:</b> ash of <i>hastidanta</i> and <i>rasanjana</i> apply. <i>kasisa</i> , <i>naktamala</i> macerated in <i>kapittha</i> juice apply
45) <b>ROMAP-AHARANA</b>	Removing the hairs all around the wounds which obstructing the healing process of the wound properly. <b>Example of Drabya using for Romapaharana:</b> two part of <i>sankhabhasma</i> , one part <i>haritala</i> macerated in vinegar apply, <i>bhallatakataila</i> and <i>snuhikshira</i> apply etc.
46) <b>BASTI KARMA</b>	alleviating the aggravated <i>vata</i>  ↓ Mitigating the pain in the wound
47) <b>UTTARA BASTI KARMA</b>	Beneficial for the wound which is due to retension of urine ,urinary calculus and disorder of menstruration.
48) <b>BANDHA</b>	Purifying or cleaning wound  ↓ Promoting softens to the wound  ↓ Healing the wound
49) <b>PATRADANA</b>	Alleviating the aggravated <i>doshas</i>  ↓ Providing softness to the wound and surrounding surface  <b>Example of Drabya using for Patradana:</b> <i>Eranda</i> , <i>bhurja</i> , <i>putika</i> , <i>haridra</i>
50) <b>KRIMIGHNA</b>	Due to Antihelminthic property, remove the worms  ↓ Cleaning or Purifying the wound  <b>Example of Drabya using for Krimighna:</b> Washing with <i>surasadigana</i> drugs. washing with <i>Saptaparna</i> , <i>karanja</i> , <i>nimba</i> , <i>arka</i> , <i>rajadanam</i> macerated in <i>kshara</i> or <i>gomutra</i> .
51) <b>BRIMHANA</b>	Promoting strenth and Nourishment overall to the person who is having chronic wound
52) <b>VISHAGHNA</b>	As like antidote ,Purifying the wounds which is caused by poison
53) <b>SIRO-VIRECHANA</b>	The <i>kapha</i> vitiated wound which situated above the shoulder, <i>sirovirechana</i> applying  ↓

	<p><i>Sirovirechana</i> Alleviating vitiated <i>kapha dosha</i></p> <p style="text-align: center;">↓</p> <p>Promoting healing of the wound</p>
54) <b>NASYA</b>	<p>The <i>vata</i> vitiated wound which situated above the shoulder, <i>nasya</i> applying</p> <p style="text-align: center;">↓</p> <p><i>Nasya</i> Alleviating vitiated <i>vata dosha</i></p> <p style="text-align: center;">↓</p> <p>Mitigating the pain</p>
55) <b>KAVALA-DHARANA</b>	<p>In oral ulcer <i>kavalagraha</i> should be obtain</p> <p style="text-align: center;">↓</p> <p>Eliminate <i>doshas</i></p> <p style="text-align: center;">↓</p> <p>Mitigating the pain</p> <p style="text-align: center;">↓</p> <p>Reducing burning sensation</p> <p style="text-align: center;">↓</p> <p>Cleansing or purifying the wound or oral ulcer</p> <p style="text-align: center;">↓</p> <p>Healing the wound</p>
56) <b>DHUMA</b>	<p>The <i>vata</i> and <i>kapha</i> vitiated wound which situated above the shoulder, <i>dhuma</i> applying</p> <p style="text-align: center;">↓</p> <p>Alleviating the vitiated <i>vata</i> and <i>kapha</i></p> <p style="text-align: center;">↓</p> <p>Ceasing the exudation</p> <p style="text-align: center;">↓</p> <p>Mitigating the pain</p>
57) <b>MADHU-SARPI</b>	<p>Promoting granulation tissues and healthy epithelial layer into the wound</p> <p style="text-align: center;">↓</p> <p>Healing the wound</p>
58) <b>YANTRA</b>	<p>To eliminating or expell out the foreign body as dead tissues etc <i>yantra</i> is beneficial.</p>
59) <b>AHARA</b>	<p>Promoting strength and digestion by <i>laghu</i> or light food to wounded person</p>

60) <b>RAKSHA-BIDHANA</b>	<p>Maintaining hygiene of food and activities of the wounded person</p> <p style="text-align: center;">↓</p> <p>Provide aseptic environment to devoid of any bacteria, virus or micro-organism involvement which may cause secondary infection to the wound.</p>
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## DISCUSSION<sup>12,13</sup>

- Among sixty or *Sasthiupakrama*, seven *upakrama* is coined in combined as *Saptopkrama* which is indicated in both *aam* and *pakvasopha* stage of *vranasopha* are stated in chapter seventeenth of *sutrasthana* named *Aampakvaeshniyamadhyaay*. These *upakrama* are *Vimlapana*, *Avaschana*, *Upnaha*, *Patanakriya*, *sodhana*, *Ropnamand* last *vaikritapaham*.
- Among *Sasthiupakrama*, *apatarpana* to *upnaha*, initial eleven *upakrama* are coined as *ekadashaupakrama* which is especially beneficial to mitigate *sopha* or swelling as well as management of wound.
- Besides *Saptaupakrama* and *ekadashaupakrama*, another eight kind of surgical modalities has been advocated as *Astavidhasastrakarma* as *chedana*, *lekhana*, *bhedana*, *darana*, *eshana*, *Aaharana*, *Vedhana*, *Vishravana* and *sheevankarma*. Among these all *shastrakarma* which one should be employed is depend upon the condition of disease, patient's condition and choice of surgeon
- After wound healing process, eight modalities are illustrated for removal of residual scar mark, is coined as *vaikritapaham* which is having the main purpose to reverse or decrease the severity of the changes after the healing of wounds or *vrana*. These included *utsadna*, *avshadna*, *Mridukarma*, *daruna karma*, *ksharakarama*, *Krishna karma*, *Pandu karma* *Pratisarana*, *Lomapharana* and *Lomasnjanae* which are restoring the normalcy and promoting the normal texture of the skin colour and appearance.
- Among these *upakrama* one or more than one *upakrama* may be employed according to the condition of wound, disease, condition of patient and availability of drugs.

## CONCLUSION

This study can be concluded that *Acharya Sushruta* describe *Vrana* (wound) and *vranaupakrama* (management of wound) in detail which can be employed according to the different stages of wound. The principle of *saptopakrama* in the management of surgical wounds providing as lot of option for the management of wound. Among all these *upakrama* those which comes under *vaikritapaham* are having importance in present scenario, because those modalities manage the deformity which develop after surgery with the use preparation advocated in *samhita*. This is more required to retrograde the further research and development study on different procedure of *Shashtiupakrama* in clinical area of *Ayurveda*.

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