

A REVIEW OF VRANAS AND THEIR MANAGEMENT ACCORDING TO VRANAU-PAKRAMA W.S.R. TO WOUND MANAGEMENT

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ABSTRACT

The wound which is referred as *Vrana* in Ayurveda, is the oldest element from which the humankind has suffered from it. The healing process of *Vrana* is a natural process, which also starts immediate after injury. *Acharya Sushruta* described *Vrana* at different places in different context of *Sushrut Samhita*. The *vrana* is important topic in academic point of view, patient care and research of newer technique and drugs for easier and effective management. The management of wound is described in *Sushruta samhita* in very detail manner. He advised sixty *upakrama* (method) of treating wound is lot of different conditions known as *shashtiupakram* in *Chikitsasthanam*. In this review article, we have tried to describe different types of *Vranas*, their *lakshanas* (signs & Symptoms), *sthanas* (locations), and their management according to *Susruta Samhita* in *Ayurveda*. Efforts have also been carried out to collect, discuss and describe the *Ayurvedis* concept of *Vrana*, i.e. Wound.

Keywords: *Vrana, upakrama, sthanas, Samhita*

INTRODUCTION

Vrana and its management are of prime importance in surgical practice. A surgeon essentially creates a wound which he has to manage accordingly by different methods. Generally, a *vrana* created by a surgeon is considered as clean which heals by primary intention, but there are many other types, which follow sec-

ondary or tertiary stages of healing. Some wound are difficult to manage and are considered non-healing ulcers. These entire factors speak for the importance of *vrana* in surgery. *Acharya Sushruta* has emphasized that *vrana* was the first disease with which a human being ever suffered.¹

The life of a new born also begins with *vrana* when he needs surgical care of umbilical cord till is fully detached and healed. Therefore concept of *vrana* and its management will be useful to surgical practice or procedure.

A pathology in which there is consumption (destruction) of body tissue and formation of scar after healing that remains for a lifetime is called as a *Vrana*. Definition of *Vrana* according to *Sushruta* is very broad. Formations of scar after tissue destruction can be either due to extrinsic factor (wound) or it can be due to intrinsic aetiology (ulcer).²

The concepts and principles of *Vrana* such as causes, classification, examination, treatment, bandaging, complications etc. mentioned in *Sushruta Samhita* by *Acharya Sushruta*³. In *Ayurveda*, sites of *Vrana* are termed as *VranaVastu* or *VranaAdhishtana*. These are mainly on basis of involvement of body structures which are categorized mainly under eight sites viz- *Twaka* (skin), *Mamsa* (muscle), *Sira* (vessels), *Snayu* (ligaments), *Asthi* (bones), *Sandhi* (joints), *Koshtha* (abdominal and thoracic viscera), and *Marma* (some vital parts of the body like brain).⁴ *Sushruta* mentioned as leprotic wound, diabetic wound, tubercular wound are non-healing wound.⁵

Acharya Sushruta described sixty different types of management of *Vrana* in general, The all 60 *upakrama* can be simplified and included in 7 *upakrama* of *sopha*.⁶

In present study an attempt is made to understand concept of *vrana* and its management (*upakrama*) in nowadays surgical aspects.

AIM AND OBJECTIVE

1. To evaluate, elaborate and discuss the various concepts of *Vrana* and its *upakrama*(management) of *Sushruta Samhita*.
2. To understand the basic principle of *vrana upakrama*(wound management).

MATERIAL AND MATHOD

The all reference of *Vrana* and its *upakrama* are collected, collated and compiled from *Sushruta smahita* and other *Ayurvedic* classics and various modern text books of surgery.

The various *vrana upakrama* (wound management methods) are discussed with their importance in enhancing wound healing.

OBSERVATION:

A] Definition of *Vrana*:-

A pathology in which there is consumption (destruction) of body tissue and formation of scar after healing that remains for a life time is called as a *Vrana*. Definition of *Vrana* according to *Sushruta* is very broad. Formations of scar after tissue destruction can be either due to extrinsic factor (wound) or it can be due to intrinsic aetiology (ulcer).⁷

B]Nidan (Aetiology) of *Vrana*:⁸

Sushruta classified *Vrana* broadly in two categories as *Nija* (due to intrinsic causes)and *Agantuja* (due to extrinsic causes).

Nija Vrana caused by Caused by vitiation of basic elements (*doshas*) of body *vata*, *pitta*, *kapha*, *rakta* and their combinations.

Aganthuja vranas are caused by external factors such as incision, punctures, lacerations, poisoned cuts, bruises etc. It can also be

caused by bites of men, animals, birds, reptiles etc.

C] Classification of Vranas:

Vranas are broadly classified into two categories according to their origin and etiology⁹- Nijavrana and Agantujavrana.

Nijavranais a term used for vranawhich is caused due to intrinsic factors whereas Agantujavrana is due to external factors like burn, trauma, accidents, animal bites etc. Further classification of Vrana on different basis is given in table no. 1].

i) Classification of Nijavrana:

According to Acharya Sushruta, there are 16 types of Nijavranas on basis of involvement of doshas. In first 15 types of Nijavrana there is involvement of vitiated doshas whereas Shuddhavrana (clean wound) is free from vitiated doshas and they are given in table no. 2].

ii) Classification of Agantujavrana(traumatic injury):

Agantujavrana is due to sudden injury like accidents, war injury, and trauma by blunt or sharp objects. Sadyovrana is a type of Agantuja Vrana. Thses are broadly divided into six types according to nature of injury as given in table no. 3].

D] Clinical features of Vrana:

i) Clinical features of Nijavrana on the basis of Vedana (pain), Varna(colour), Strava (discharge), Gandha(Smell) and other special characters is described in given table no. 4].

ii) Clinical features of ShuddhaVrana : Shuddhavrana is a type of nijavrana. Wound

which is not very red, not very pale, not very painful, not very elongated and not not having thick edges, having less dosha-dushti, having the same colour of the tongue and soft, glossy, smooth and painless, well-shaped and having no secretion are considered to be Shuddhavrana.

iii) Clinical features of Agantujavrana on the basis of different kind of wound inflicted on body due to various extrinsic factors, various shapes of traumatic wounds are triangular, rectangular, quadrangular, circular, semi-lunar, extensively depressed in centre as a saucer and raised in the centre like barley grains, Acharya Sushruta broadly classified these Agantujavrana in to six types, its clinical feature are given in table 5].

E]Samprapti (Pathogenesis) of Vrana:

Due to all etiological factors (Causes) there occurs destruction in mamsa dhatu which result in oozing of blood from its normal pathway and thus leading to Dushtavrana. Vrana is caused not just by the individual vitiated doshas only, but also with the combined vitiation of doshas. Even though the Vrana is manifested at first on the skin, later it extended to the deeper structure such as meda, asthi etc. and lastly it results in dushtavrana thus destructing considerable amount of dhatu.

F] Prognosis (Sadhya-Asadhyata) of Vrana

Acharya Sushruta has classified Vrana depending upon prognosis mainly in two types. These are Kritiya (curable) and Akritiya (incurable). Prognosis of vrana also depends on the basis of patient's age, strength. Site of vrana,

nature of discharge, smell of *vrana* and associate disease.

Vrana of patients who are young, good physical condition and have control on habits are curable in the young. *Vrana* heals faster because of tendency of body tissue to regenerate faster. In patients with good physical condition, the muscle being firm and well developed. Use of sharp instruments is not likely to damage important structure like vessels, ligaments etc. In patients having control on their habits, even after surgical procedures they have no complaints.

Asadhya vrana which are not at all curable, for example head injury with discharge of CSF. *Agantujavrana* having discharge like fatty tissue, CSF, bone marrow is incurable. Emaciated person with *Vrana* discharging excessive pus mixed with blood and having complications such as indigestion, respiratory tract infection shows very poor response to the treatment i.e. poor prognosis.

G] Upadravas (Complications) of Vrana: *Upadravas* of *Vrana* produced due to *vrana*, according to *sushruta upadravas* of *vrana* are 5 in number. They are *gandha*, *varna*, *strava*, *vedana* and *akruti*. He also described *jwara*, *Atisara*, *murchha*, *hikka*, *chardi*, *aruchi*, *swasa*, *kasa avipaka* and *trishana* as the *upadravas* of *vrana*⁹

H] Concept of Vrana (wound) healing in Ayurveda:¹⁰

Ropana is the *sanskrita* word which means healing. *Vrana-ropana* literally means healing of *vrana* (wound as well as ulcer). Instead of this, *Charaka* says that *Vrana* with floor which is not very red, not very pale, not very brownish black, not associated with excruciat-

ing pain, no hyper-granulation, or pus pockets are suitable for healing of *Vrana*. There are four steps in healing of *Vrana* are as below:

- 1) *Dushtaawastha* (stage of inflammation)
- 2) *Shuddhaawastha* (stage of granulation tissue)
- 3) *Ruhyamanaawastha* (stage of maturation and remodelling)
- 4) *Rudhaawastha* (stage of contraction)

These are four stages in healing of *NijaVrana*. In *AgantujaVrana*, first stage is *Shuddhaawastha* and rest it follows four stages in healing of *NijaVrana*.

1) *Dushta Vrana*: The word *Dushta* literally means bad, wicked, offensive, and culpable. *DushtaVrana* is defined as *Vrana* in which vitiation of all four *doshas* causes chronicity of *Vrana* presenting with features like excessive exudates, foul smell, signs of inflammation etc. In other words, *Vrana* not showing features of *ShuddhaVrana* (clean wound) is called as *DushtaVrana*.

2) *Shuddha Vrana*: The *Vrana* that is free from three vitiated *doshas* or any complications, has blackish white margins due to pure blood supply, granulation tissue at surface level, and without any pain or discharge is said to be *ShuddhaVrana*.

3) *Ruhyamana Vrana*: The *Vrana* with pigeon coloured (grey) margin without any exudates and showing partial layer of skin epithelium (*shveta* called as *charmaceli* or *chipitika*) are called as *Ruhyamana Vrana*.

4) *Rudha Vrana*: The *Vrana* whose floor has healed completely, which is not indurated or swollen or painful, and is of same colour and level of skin is said to be *Rudha Vrana*.

I] Factors affecting Vrana Ropana (Healing of wound):

- 1) Age: *Vrana* heals faster in young patients compared to old patients due to good metabolic rate and tendency of body cells to regenerate faster.
- 2) Addiction: *Sushruta* mentioned that patients who have control over their habits such as alcoholism are ideal patients for healing of *Vrana*.
- 3) Site: *Vrana* on buttocks, genitalia forehead, cheek etc heals faster and with less complication. Whereas *Vrana* on eyes, gums, ear, umbilicus, perineal raphe, axilla are difficult to treat.
- 4) Bandaging: improper bandaging causes delay in healing of *Vrana*.
- 5) Maggots: maggots in *Vrana* cause delay in healing.
- 6) Foreign body: *Charaka* mentioned that *Vrana* with foreign body or poison delays healing.
- 7) Associated disease: *Vrana* associated with diabetes, skin disorders, tuberculosis, poisoning heals with difficulty.
- 8) Nutrition: *Sushruta* mentioned that those patients who are emaciated and having *Dushta Vrana* are incurable. He also mentioned patients having dietary regulations are easy to cure.
- 9) Food: *Vrana* heals rapidly of one who takes boiled rice of an old crop, bland as vegetable, semisolid diet in small amount, meat of wild animals, radish, pomegranate, Indian goose berry fruit. Over eating, intake of mutually contradictory ingredients of food, intake of unwholesome food cause delay in healing of *Vrana*.

- 10) Sleep: Patients who take regular sleep at night and do not sleep in day are easily curable.
- 11) Emotions: excessive grief and anger causes delay in healing.
- 12) Sex: sex during wound healing causes delay of healing. *Sushruta* explained that sex during *vrana* healing can even lead to death.
- 13) Place of patient: if patient is kept in *Vranitagara* (ward for patients protected from draughts and hot sun, situated at good place, kept neat and clean) are curable.

J] Management of Vrana: Quite a Number of conditions and types of wounds are responsible for early healing, delay healing or incurable stages. Although much progress has been made in management of wound in past few years, management of *Vrana* is been significant health related issue ever since period of *Sushruta*. Numbers of procedures are performed for various steps of healing of *Vrana*. Among these, *Shuddha Vrana* is been treated by *ropana* remedies, whereas *Dushta Vranais* managed on the basis of involvement of vitiated *doshas*, site of *Vrana*, excessive purification, and inflammatory changes. *Wound* is explained by *Sushruta* in management of various diseases like inflammatory oedema, abscess etc.

Sushruta described sixty different types of management of *Vrana* in general. He describes almost all the basic principle of *vranaupakrama* in form of seven different types of *upakrama* (management) of *sopha*.¹¹ Management given by *Sushruta* is mainly in two divisions as management of *vrana* (wound) and management of *vrani* (wounded). Out of sixty pro-

cedures mentioned in table no.6], forty procedures mentioned in top four categories deals with converting *DushtaVrana* into *ShuddhaVrana*. These include measures to control vitiated *doshas*, controlling inflamma-

tion, surgical measures, and measures for non-healing wounds. Wound bed preparation in today's practice is very much similar to this concept which was elaborated in very much detail *Sushruta Samhita*.

Table 1: Classification of *Vrana*:-

According to Etiology (Nidana)	According to Site	According to Clinical features	According to Prognosis
(2)	(8)	(4)	(4)
1. <i>Nijavrana</i>	1. Skin, 5. Bone,	1. <i>Dushta</i>	1. <i>SukhaSadhya</i>
2. <i>Agantujavrana</i>	2. Muscle 6. Joints, 3. Vessels 7. Internal Organ, 4. Ligaments, 8. Vital Parts.	2. <i>Shuddha</i> 3. <i>Ruhyamana</i> 4. <i>Rudha</i>	2. <i>KashtaSadhya</i> 3. <i>Yapya</i> 4. <i>Asadhya</i>

Table 2: 16 types of *Nijavrana*

1. <i>Vataja</i>	2. <i>Pittaja</i>	3. <i>Kaphaja</i>
4. <i>Raktaja</i>	5. <i>Vatapittaja</i>	6. <i>Vatakaphaja</i>
7. <i>Vataraktaja</i>	8. <i>Pittakaphaja</i>	9. <i>Pittaraktaja</i>
10. <i>Kapharaktaja</i>	11. <i>Vatapittaraktaja</i>	12. <i>Vatakapharaktaja</i>
13. <i>Pittakapharaktaja</i>	14. <i>Vatapittakaphaja</i>	15. <i>Sannipataja</i>
16. <i>Shuddhavrana</i>		

Table 3: Types of *Sadyovrana*:

1. <i>Chinna</i> (excised)	2. <i>Bhinna</i> (stab injury)	3. <i>Viddha</i> (punctured)
4. <i>Kshata</i> (lacerated)	5. <i>Picchita</i> (Contusions/ hematoma)	6. <i>Ghrishta</i> (abrasions)

Table 4: Clinical features of *Nijavrana*:

Types of <i>NijaVrana</i>	<i>Vedana</i> (pain)	<i>Varna</i> (colour)	<i>Strava</i> (discharge)	<i>Gandha</i> (Smell)	other special characters
<i>Vataja</i>	Throbbing, pricking, stretching	Black, Red	Cold, slimy less discharge	Pungent	Less granulation tissue,
<i>Pittaja</i>	Burning sensation	Yellow, Blue	Warm, light red colour	Tishna	Pustules
<i>Kaphaja</i>	Constant excessive itching	Pallor(Panduvarna)	Whitish, cold, sodden slimy	Like raw meat	Rigid floor, thick
<i>Raktaja</i>	Like <i>pittaja Vrana</i>	Like coral spouts with black blister	Blood	Iron like	Tendency to bleed
<i>Vatapittaja</i>	Pricking burning	Yellowish-Red	Yellowish red,	Fried paddy	---
<i>Vatakaphaja</i>	Pricking, itching	---	Cold, slimy less.	Like Linseed oil	Hard

<i>Vataraktaja</i>	Pricking+++	Red	Blood, red	Like Sesamum oil	Numbness
<i>Pittakaphaja</i>	Burning Itching	---	Yellowish white, warm	Like fish	---
<i>Pittarakhtaja</i>	Burning+++	Like upper layers of melted.	Black	----	Soft
<i>Kapharakhtaja</i>	Itching++	Redshiny	Reddish pale	---	Slimy,
<i>Vatapittarakhtaja</i>	Pricking, burning, fuming	---	Yellow thin	---	With pulsation
<i>Vatakapharakhtaja</i>	Itching, burning	---	White, thick blood	---	With pulsation
<i>Pittakapharakhtaja</i>	Burning, Itching	---	White & thick	---	Tendency to suppurate
<i>Vatapittakaphaja</i>	Sign of vataja+pittaja+kaphaja				
<i>Sannipataja</i>	Different kinds	Different colours	Different types	Different types	All doshas sign

Table 5: Types and clinical features of *AgantujaVrana*:

Sr. no.	Types	clinical features
1	<i>Chinna</i> (Excised wound)	Associated with separation of part of body
2	<i>Bhinna</i> (Stab injury wound)	Injury to body cavities resulting in discharge
3	<i>Viddha</i> (Punctured wound)	Body cavity pierced by sharp pointed weapon
4	<i>Kshata</i> (Lacerated wound)	Neither excessively excised nor excessively incised
5	<i>Picchita</i> (Crushed wound)	Due to severe blow and pressure
6	<i>Ghrista</i> (Abrasion wound)	Skin getsw peeled off due to rubbing injury

Table 6: 60- procedures for management of *Vrana*¹²:

Procedure Names	No.	Types
1) Nasal medication, 2) Use of errhines, 3) Gargling, 4) Smokingwith medicinal drugs, 5) Enema, 6) Douching, 7) Purgation, 8)Emesis, 9) Bloodletting, 10) Internal oleation.	10	Control of vitiated doshas
1)Food abstinence, 2) Application of local paste, 3) Irrigation, 4) Anointing, 5) Fomentation, 6) Gentle massage, 7) Application of poultice, 8) Methods to induce suppuration.	08	Control of inflammation
1) Excision, 2) Incision, 3) Bursting by medication, 4) Scraping,5) Probing, 6) Extraction, 7)Puncturing, 8) Drainage, 9) Suturing, 10) Wound edge approximation, 11) Squeezing out by application of drug, 12)Haemostasis, 13) Instrumentation	13	Surgical measures
1) Covering with leaves, 2) Depilation, 3) Cauterisation, 4) Application of caustics, 5) Hardening, 6) Softening, 7) Removal of over granulation 8) Encouraging granulation tissue formation, 9) warming application.	09	For non-healing wounds
1) Bandaging, 2) Application of honey and butter milk,	09	For clean wound

3) Seven healing procedures by use of decoctions, wicks, pastes, medicated butter milk and oil, thickened extract, dusting powder.		
1) Fumigation of Vrana, 2) Cooling application	02	For pain management
1) Pigmenting procedure 2) Depigmenting procedure, 3) Restoration normal skin colour, 4) Encouraging hair growth	04	Restoring normalcy of scar
1) Restorative measures, 2) Light, warm, demulcent, appetizing diet	02	Dietary regimen
1) Protecting from invisible creatures	01	Protective
1) Removal of maggots 2) Neutralizing poison	02	Miscellaneous

DISCUSSION

Among these *upakrama* one or more than one *upakrama* may be employed according to condition of wound, disease, condition of patient, availability of drugs and all that. All these 60 *upakrama* can be classified into the seven *upakrama* of *sopha*. *Saptopkrama* of *sopha* are stated in chapter 17 of *sutrasthanam* named *Aampakvaeshniyamadhyaay*. These *upakrama* are *Vimlapana*, *Avasechana*, *Upnaha*, *Patanakriya*, *sodhana*, *Ropnamand* last *vaikritapaham*. This regimen of *saptopakrama* is described for both *aam* and *pakvasopha* means it included *Nija* and *Agantuja* both type of *vrana*.

As in *nijavrana dosha* are involved from initial and in *agantujavrana* involvement of *dosh* occur later on. In reference to *sophasaptopakrama* are advocated from initial to last, *Vimlapana* in *aamsopha* and *vaikritapaham* for the wound made during surgery after *pakvavastha*. In *saptopakrama* from *vimlapana* to *upnaha* our approach is conservative and for this purpose from *alep* to *vaman* initial eleven *upakrama* are used for the same purpose. So initial 11 *upakrama* may be included into initial 3 *upakrama* of *saptopakrama* of *sopha*. Next *saptopakrama Patana* included all the *shas-*

trakarma as *chedana*, *lekhana*, *bhedana*, *darana*, *eshana*, *Aaharana*, *Vedhana*, *Vishravana* and *sheevankarma*. Among these all *shastrakarma* which one should be employed is depends upon the condition of disease, patient's condition, availability and choice of surgeon. After *Patana* next two *upakrama* *Shodhana* and *ropana* included next 14 *Shashti upakrama* from *sandhna* to *vrnadhupan*. Among all *Saptopakramvaikritapaham* is the most important and vast and included rest all the *Shashtiupakrama*.¹³

CONCLUSION:

This review study, we can be concluded that *Acharya Sushruta* describe *Vrana* (wound) and *vraanaupakrama* (management of wound) in detail. This description clearly suggests that they have understood this disease clearly and therefore were able to treat this condition properly. That can be employed according to the different stages of wound. It is easy to learn and apply the principle of *saptopakrama* in the management of surgical wounds whereas *Shashtiupakrama* provide us lot of option for the management of wound in different stages.

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