



THE MANAGEMENT OF NON HEALING ULCERS – AN AYURVEDIC PERSPECTIVE

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ABSTRACT

Background: *Vrana* or wound means destruction or rupture or discontinuation of body tissues. The skin, muscle tissue, bones fat, ligament, vitals and viscera determine the prognosis of an ulcer. In this study the details of *Vrana* or ulcers are discussed taking reference from classics and contemporary books of medical science to give an outlook on specifically the non-healing ulcers and their management. **Materials and Methods:** The literary data for the study were collected from the books available in institutional library where the research was conducted. **Discussion:** The treatment of ulcer is done in two ways as systemic treatment and local treatment of ulcer. The treatment is done with drugs that promote healing, purify body and local site of ulcer. **Conclusion:** There are lot of scope of research for further study. The formulations explained for *Shodhana* (cleansing) and *Ropana* (healing) along with single drug need to be further studied for their scientific validation.

KEYWORDS : *Vrana*, non-healing ulcers

INTRODUCTION

The term *Vrana* literally means destruction or rupture or discontinuation of body tissues. Prognosis of ulcer is determined by its location eg. skin (*Tvaka*), blood vessels (*Shira*), muscle tissue (*Mamsa dhatu*), fatty tissue (*Meda dhatu*), bone (*Asthi dhatu*), ligament (*Snayu*), vital organs (*Marma*) and viscera of chest and abdomen. (*Amtaradi*) The complications of ulcers are *Visarpa* (erysipelas), *Pakshaghata* (hemiplegia), *Shirastambha* (constricted vessels), *Jwara* (fever) etc. are described. Sloughing of ligaments and vessels, deep seated appearance of maggots, fracture of bone near the ulcer, presence of foreign body in the ulcer etc hamper the healing process. Treatment of *Nija vrana* (endogenous ulcer) is different from *Agantuja vrana* (exogenous ulcer) because endogenous ulcers are caused by vitiation of *Vatadii doshas*, and exogenous ulcers are initially caused by various type of trauma such as *Vadha* (stab injury etc.), *Bandha* (excessive tying), *Prapatana* (injury due to fall), injury due to teeth and nail etc. But later on in exogenous ulcers also involvement of *Dosha* takes place and then treatment should be adopted as *Nija vrana* (endogenous ulcer). In endogenous ulcers, *Shodhana* therapy should be adopted by *Vamana* (emesis), *Virechana* (purgation) and *Basti* (medicated enema) and bloodletting for removal of *Doshaja* (toxic materials) from body. and *Agnikarma*. *Agnikarma* has *Ushna guna* (hot property) which is opposite to *Vata* and *Kapha*. Due to heat, vasodilation leads to alleviation of *Srotorodha* resulting in proper vascularity to organ or part. In exogenous ulcers, local treatment with use of *Kshara* (alkaline substances), surgical intervention and cauterization is recommended.

Review of literature

Vrana (ulcers) are of two types, *Nija vrana* (endogenous ulcers) and *Agantuka vrana* (exogenous ulcers)^[1-11] This classification is based on etiology and mode of treatments. Endogenous ulcers are caused by vitiation of *Vata* etc. *Dosha* from initial stage while exogenous ulcers are caused initially by various types of trauma and later *Dosha* vitiation occurs. Complications of ulcers like *Visarpa* (erysipelas), *Sirastambha* (constricted vessels), *Jwara* (fever) etc. have been described. Importance of bloodletting is described during the stage of *Vrana shopha* (i.e.inflammatory phase), alleviation of impure blood from body reduces toxic chemicals and pacifies *Dosha*. Description of fracture, its complications and management is elaborated. *Dahakarma* (cauterization) causes constriction of blood vessels to prevent bleeding from ulcer. Application of alkaline substances (*Kshara*) on ulcer can be done along with surgical intervention and cauterization. Prognosis of ulcer can be described on the basis of type of ulcer and its various locations.

The endogenous ulcers occur from the bodily *Dosha*, whereas the exogenous ulcers are caused by external causative factors. Exogenous ulcer are caused by blowing, binding, falling down, injury with fangs, teeth or nails as well as due to poisonous contact, fire and weapons etc. Exogenous ulcers are different from the endogenous ones in respect of treatment with *Mantra* (incantations), anti-poisonous pastes for external application etc. While endogenous ulcer bears opposite characteristic features in respect of etiology, sign symptoms and treatment.

Importance of *Dosha* dominance in treatment

Exogenous ulcers not being pacified and having endogenous causative factors should be treated as endogenous ulcers according to predominance of *Dosha*

Nija Vrana^[2] (Endogenous ulcers)

Vata, *Pitta* and *Kapha* are vitiated by their respective causes get lodged in external passage and thus produce endogenous ulcers

Dosha dominant *Vrana* and their treatment

Vata dominant *Vrana* and treatment

The ulcer caused by *Vata* is stiff, hard to touch, with scanty exudation, excruciating and pricking pain with throbbing and blackish discoloration. *Vatika* ulcer should be treated with *Sampoarana* (filling of ulcer cavity), intake of unctuous substances (oleation therapy), unctuous fomentation and poultices, ointments and sprinklings.

Pitta dominant *Vrana* and treatment

Pittaja ulcer is known from thirst, unconsciousness, fever, sweating, burning sensation, impurity, tearing and foul smell with discharge of pus from ulcer. One should pacify the *Pittaja* ulcer by anointing and sprinkling with cold, intake of sweet and bitter drugs, intake of ghee and purgation

Kapha dominant *Vrana* and treatment

Kaphaja ulcer has much sliminess, heaviness, unctuousness, numbness, with mild pain, paleness in colour, little slough and prolonged healing. *Kaphaja* ulcer is treated with anointing and sprinkling with astringent, pungent, dry and hot drugs as well as fasting and digestive measures.

The above two types of ulcers are further divided into twenty types on the basis of distinctive features.

Twenty types of ulcers^[3]

Curable (can be treated with surgical intervention), incurable; infected, non-infected; situated in vital parts, not situated in vital parts; closed, open; hard, soft; discharging, non-

discharging; poisonous, non-poisonous; unevenly located, evenly located; pouched, un-pouched; elevated, depressed – these are the twenty types of ulcers according to various distinguishing features

Three fold examination^[4]

Examination of ulcer can be performed by three methods e.g. by inspection, interrogation and palpation.

Age, complexion and colour, body parts and sense organs are examined by inspection. Etiology, nature of pain, suitability and power of digestion should be known by patient's statement. By palpation softness and coldness are known with their contraries

Twelve types of ulcers^[5]

White, with depressed margins, very thick margins, much greyish (*pinjara*), blue, blackish, surrounded with numerous boils, red, black, very fetid odour, non-healing nature and bottle-necked (narrow opening) these are twelve types of defective (*Dushta*) ulcers

Sites of vitiation^[6]

In the treatise, eight locations of wounds have been mentioned such as skin, blood vessels, flesh, fat, bone, ligament, vital parts and viscera

Specific odours of Vrana^[7]

Eight types of wound odours have been defined by the experts like ghee, oil, muscle-fat, pus, blood, and cadaver, sour and fetid.

Fourteen types of discharges and sixteen complications^[8]

Discharges from ulcers are of fourteen types in appearance such as *Laseeka* (like lymph), water, pus, blood, colour of exudation as yellow, reddish, brownish, ochre-coloured, blue, green, unctuous, rough, white and black.

The experts have mentioned sixteen complications of wounds such as erysipelas, paralysis, occlusion in blood vessels, tetanus, and mental confusion, and insanity, pain in wound, fever, thirst, lockjaw, cough, vomiting, diarrhoea, hiccups, dyspnoea and trembling

Causes of non-healing ulcers^[9]

Defects are known to be twenty four according to etiological factors which are as follows: moistening of ligaments, excess of fluid in blood vessels, deepness, eaten by maggots, cracking of bones, presence of foreign body, presence of toxins, spreading, excessive tearing with nails or wooden piece, friction of skin, friction of body hair, faulty bandage, over-application of unctuous substance, excessive emaciation due to over dose, indigestion, over-eating, intake of incompatible food items, unsuitable food, grief, anger, day-sleep, physical exercise, sexual intercourse and inactivity.

These factors lead to delay in the healing process. Ulcers having much impurity become difficult to be cured due to presence of excessive discharges, odours, defects and complications

Factors affecting prognosis^[10]

Wound is easily curable if it is located in skin and muscles, easy places, youthful age, without complication, in a wise patient and of recent origin. If it is devoid of some of these qualities it is curable with difficulty and when it is devoid of all the qualities it is incurable and thus not to be treated.

Principles of management^[11]

In cases of wound, first of all, purification with therapeutic emesis, purgation, *Shashtra karma* (surgical intervention) and *Basti* (medicated enema) should be done after assessment of

condition because the wounds get healed quickly in those with cleansed body.

Procedures for management of ulcers^[12]

The measures of treatment in order such as – measures for pacification of swelling, six types of surgical operations, pressing, cooling?, uniting, fomentation, pacification, probing, cleansing, healing, cleaning paste, healing paste, cleaning oil, healing oil, two types of covering with leaf, two types of bandaging, diet, elevation, two types of cauterization, depression, hardening fumigation, softening fumigation, hardening paste, softening paste, powdering, colorization, healing, repulatory- these are the thirty six measures of treatment of wounds.

Guidelines for management of ulcers^[13]

The physician observing *Shopha* (swelling) as prodromal sign in the beginning should apply blood-letting to prevent the manifestation of wound. One should evacuate the persons with plenty of impurity and lighten those with little impurity. He should overcome the wound predominant in *Vata* first with decoctions and Ghritas. Paste of *Nyogrodha* bark (*Ficus bengalensis* Linn.), *Udumbara* (*Ficus glomerata* Roxb.), *Ashwatha* (*Ficus religiosa* Linn.), *Pplaksha* (*Ficus lacor* Buch.Ham.) and *Vetasa* (*Salix caprea* Linn.) are mixed with ghee is an excellent cooling for inflammation, other local applications prescribed are (1) *Vijaya* (*Terminalia chebula* Retz.), *Madhuka* (*Glycyrrhiza glabra* Linn.), *Veera*, *Bisagranthi*, *Shatavari* (*Asparagus racemosus* Willd.), *Neeilotpala* (*Nymphaea stellata* Willd.), *Nagapushpa* (*Mesua ferrea* Linn.) and *Chandana* (*Santalum album* Linn.). Parched grain flour, *Madhuka*, *Sharkara* and ghee. *Avidahi* (non-burning) food is the best remedy for inflammation.

Patana (incision) and Upanaha (poultice)^[14]

If swelling of ulcers treated in this way does not subside, poultice should be applied and when ripened should be incised. Warm poultice of the bolus of parched grain flour mixed with oil or ghee or both is useful for ripening of inflammation. The bolus of parched grain flour mixed with *Tila* (*Sesamum indicum* Linn.), linseeds (*Linum usitatissimum* Linn.), sour curd, yeast, *Kustha* (*Saussurea lappa* C. B. Clarke) and salt is recommended as poultice.

Swelling is known as *Vidagdha* (under ripening) by the symptoms such as pain, burning sensation, redness and piercing pain. The same should be known as ripened when it is like water-bag on palpation and rises on pressure. Linseed, *Guggulu* (*Commiphora mukul*), latex of *Snuhi* (*Euphorbia nerifolia* Linn.), faeces of chicken and pigeon, alkali of *Palasha* (*Butea monosperma* Linn.), *Svarnksheeri* (*Argemone mexicana* Linn.) and *Mukoolaka* (*Pistacia vera* Linn.). This is the group of drugs which helps in the tearing of ripened inflammation in delicate patients otherwise it should be operated upon surgically.

Six types of surgical procedures^[15]

Surgical treatment is of six types such as – incision, puncturing, excision, scraping, scarification and suturing.

Indications of various surgical procedures^[16]

Sinuses, ripened inflammations (i.e. suppurated ulcer or abscess), intestinal perforation, intestinal obstruction, having foreign body within and other similar conditions can perform incision. Ascites, suppurated tumour and *Raktaj gulma* (uterine tumour), blood disorders such as erysipelas, boils etc, are treated by puncturing. Wounds protruded with thick margins, elevated, hard, piles etc and other growths should be excised. The wise physician should scrape leucoderma, skin diseases and other such disorders which need scraping. The physician should perform scarification over *Vatarakta* (nodular swelling), *Granthi* (cysts) pimples, urticarial rashes,

red patches, skin diseases, injured parts and swellings. Suturing should be done in pelvic, abdominal surgeries (i.e., laparotomy) etc. Thus the scholars have mentioned six types of surgical treatments.

Vrana peedana (pressing of wound)^[17]

Wounds with narrow opening and multiple loculi should be pressed on. *Kalaya* (*Pisum sativum* Linn.), *Masoora* (*Lens culinaris* Medic.), wheat (*Triticum sativum* Lam.) and peas pounded and applied as paste without mixing any fat are useful for pressing the wound.

Various treatment modalities for pacification of ulcer^[18]

Bark of *Shalmali* (*Salmalia malabarica* Schott), *Bala* (*Sida cordifolia*) root, tender leaves of *Nyagrodha* – this group (of drugs) known as *Nyagrodhadi* or *Baladi* acts as cooling agent applied as paste and sprinkling. Wounds predominant in *Raktapitta* should be cooled by applying very cold ghee washed hundred times, milk or decoction of *Madhuka* (*Madhuka indica*).

Chronic wound should be pasted with honey and ghee there after bandaged leads to evenly union. When they are evenly set, powder of *Priyangu* (*Callicarpa macrophylla* Vahl.), *Lodhra* (*Symplocos racemosa* Roxb.), *Katphala* (*Myrica esculenta* Buch-Ham.), *Lajjalu* (*Mimosa pudica* Linn.) and *Dhataki* (*Woodfordia fruticosa* Kurz.) should be applied thereon or the powder of *Panchavalkala* mixed with that of *Shukti bhasma* (pearl ash) or the powder of *Dhataki* and *Lodhra* should be applied.

Application of above measures leads to proper wounds healing

Management of various conditions of Vrana^[19]

Wounds which are dry, intensely painful, stiffened and predominant in *Vata* should be fomented by bolus fomentation with *Krishara* and *Payasa* (a type of dietary preparation). Similarly, they should be fomented with seasoned *Veshavara* made of the meat of domestic, burrow-dwellers, aquatic or marshy animals or hot *Utkarika*. Thus the patient gets relief. If the wounds predominant in *Vata* have burning sensation and pain, they should be pasted upon with linseed and sesamum seeds roasted, then dipped in milk and again pounded with the same milk. *Bala* (*Sida cordifolia* Linn.), *Gudoochi* (*Tinospora cordifolia*), *Madhuka* (*Glycyrrhiza glabra* Linn.), *Prishnaparni* (*Uraria picta* Desv), *Sshatavari* (*Asparagus racemosus* Willd), *Jeevanti* (*Leptadenia reticulata* W. & A.), sugar, milk, oil, fish fat, ghee cooked with beeswax is known as *Sneha sharkara*, it relieves pain. The wound should be sprinkled with warm decoction of two *Panchamoola* (ie. *Dashamula*), milk and ghee with oil.

Barley powder (*Hordeum vulgare* Linn.), *Madhuka* (*Glycyrrhiza glabra* Linn.) and *Tila* mixed with ghee should be applied as warm paste for alleviating burning sensation and pain. *Payasa* prepared of *Mudga* (*Phaseolus radiates* Linn.) mixed with *Tila* should be applied as poultice to pacify pain and burning sensation. These management principles are beneficial in wounds.

Eshana (Probing)^[20]

In case of wounds with narrow opening, profuse discharge and pouch and not situated in vital parts, probing is beneficial. Probe is of two types – soft and hard, the former is made of soft stalks of plants and the latter of iron (metallic) rods. In deep and muscular parts iron rods preferred while in other parts plant stalks should be used for probing.

Vrana shodhana (local purification of ulcers)^[21]

Wounds with foul odour, abnormal colour, profuse discharge and intense pain should be known as *Dushta vrana* (unclean) and as such wounds should be treated with cleansing agents.

Decoctions of *Triphala*, *Khadira* (*Acacia catechu* Willd), *Daruharidra* (*Berberis aristata* DC), *Nyagrodhadi* group, *Bala* (*Sida cordifolia* Linn.), *Kusa* (*Desmostachya bipinnata* Stapf.), leaves of *Nimba* (*Azadirachta indica* A. Juss) and *Badara* (*Zizyphus jujube* Lam.) are regarded as cleansing drugs. *Tila* paste, salt, *Haridra* (*Curcuma longa* Linn.), *Daruharidra* (*Berberis aristata* DC), *Trivrit* (*Operculina turpethum* Linn.) *Ghrita*, *Madhuka*, *Nimba* leaves – this formulation is said to wound cleanse.

Ropana (healing) of ulcer^[22]

Those ulcers, are not very red, pale, blackish, painful, elevated and protruded should be known as clean and appeals healing process. Decoction of *Nyagrodha*, *Udumbara*, *Asvattha*, *Kadamba*, *Plaksha*, *Vetasa*, *Karaveera* (*Nerium indicum* Mill.), *Arka* (*Calotropis procera* R. Br.) and *Kutaja* (*Holarrhena antidysentrica* Linn.) are wound healing. *Chandana* (*Santalum album* Linn.), lotus stamens, *Daruharidra* bark, blue water lily, *Meda* (*Polygonatum airhifolium* Royle), *Moorva* (*Marsdenia tenacissima* W. & A.), *Lajjalu* (*Mimosa pudica* Linn.) and *Madhyasti*- this formulation is wound healer. *Prapaundarika*, *Jeevanti*, *Gojihva* (*Onosma bracteatum* Wall.), *Dhataki*, *Bala* and sesamum should be applied as paste with ghee for wound healing. *Kampillaka* (*Mallotus philippinensis* Muell Arg), *Vidangra* (*Embelia ribes* Burm), *Kutaja*, *Triphala*, *Bala*, *Patola* (*Trichosanthes dioica* Roxb.), *Nimba*, *Musta* (*Cyperus rotundus* Linn.), *Priyangu*, *Khadira*, *Dhataki*, *Sarja*, *ela* (*Elleteria cardamomum* Maton.), *Aaguru* (*Aquilaria agallocha* Roxb.) and *Chandana* are pounded together and oil is extracted. This oil is used as ulcer healing agent.

Similarly, oil prepared with equal quantity of *prapaundarika*, *Mahuka*, *Kakoli* (*Roscoca procera* Wall.), *Ksheerakakoli* (*Roscoca procera* Wall.), *Chandana* and *Rakta chandana* (*Pterocarpus santalinus* Linn.) is an excellent ulcer healing agent. Oil cooked with *Durva* juice or *Kampillaka* or paste of *Daruharidra* bark is an important ulcer healer. By the above method *Ghrita* should be prepared and used for healing, ulcers predominant in *Rakta* and *Piitta*

Patta bandhana (bandage)^[23]

For covering the wound, leaves of *Kadamba*, *Arjuna*, *Nimba*, *Patala* (*Stereospermum suaveolens* DC.), *Pippala* (*Ficus religiosa* Linn.) and *Arka* should be used. Bandage made of plant bark, deer hide or flaxen cloth is used in wounds. Bandaging of wounds are of two types i.e., It can be started either from left or right side.

Contraindications^[24]

Patients of ulcer should abstain from salt, sour, pungent, hot, burning and heavy food and drinks and also sexual intercourse. Food and drinks that are not too cold, heavy and fatty, non-burning, according to the nature of ulcer are beneficial, while day-sleep is not suitable in these patient.

Suitable food and medicines

For raising the depressed wounds galactogogues (*Stanyajanana*), vitalizers (*Jeevaneeya*) and bulk promotives (*Brunhaneeya*) drugs should be applied. Similarly, *Bhoorjagranthi* (nodes in the tree of *Butea utilis*), *Ashmakasisa* (copper sulphate), purgatives, *Guggulu* and excrement of sparrow and pigeon should be used for depressing the wounds.

Indications and contraindications of Agni karma (cauterization)^[25]

Excessive haemorrhage after excision, excisable growths, *Kaphaja* nodules, glands, stiffness and disorders due to *Vata*, wounds with hidden pus and lymph, deep and firm; and after amputation of body part, cauterization is prescribed. The expert in cauterization should cauterize the spot with

beeswax, oil, marrow, honey, muscle-fat, *Ghrita* or various heated metallic sticks. Wounds deep and predominant in *Vata* and in patients rough and delicate should be cauterized with fat or beeswax otherwise with iron stick or honey. Cauterization should not be applied in children, debilitated, old persons, pregnant women, those suffering from internal haemorrhage, thirst, fever, weak and poisoned persons and in wounds situated at ligaments and vital parts, poisoned, foreign body, ophthalmic and leprosy wounds.

Kshara karma (application of alkali) and dhupana (fumigation) ^[26]

The physician conversant with dose, time and *Agni* (heat) may apply alkali in cases amenable to surgical treatment and cauterization according to severity of disease and morbidity. Wounds attain hardness by being fumigated with aromatic substances and heartwood. The wounds get softened if fumigated with *Ghrita*, marrow or muscle-fat. Through fumigation pain, discharges, odours, maggots, hardness and softness of wounds are removed. *Lodhra*, leaf-buds of *Nyagrodha*, *Khadira*, *Triphala* and *Ghrita* - this combination used as paste provides looseness and softness in wounds. The wounds which are painful, hard, stiff and without discharge should be pasted frequently with barley powder mixed with *Ghrita*. Wounds may be saturated by applying frequently the paste of *Payasa* (cereals cooked with milk) made of *Mudga*, *Shashtika* and *Shali* rice or *Jeevaneeya* drugs mixed with *Ghrita*.

External applications ^[27]

By dusting the wounds with the powders of barks of *Kakubha* (*Terminalia arjuna*), *Udumbara*, *Asvattha*, *Lodhra* (*Symplocos racemosa* Roxb), *Jambu* (*Eugenia jambolana* Lam) and *Katphala* (*Myrica esculenta* Buch-Ham) they heal the skin quickly.

Manashila (Realgar), *Manjishtha*, *Lkshac*, *Haridra* and *Daruharidra* used as paste with ghee and honey is an excellent cleanser of skin.

The paste prepared by *Bhasmas* of iron, *Kaseesa* and *Triphala* flowers provide blackness in the newly formed skin quickly.

Kaleeyaka (*Jateorhiza palmata* Miers), *Nata* /*Tagara* (*Valeriana wallichii* DC), mango seeds, *Nagakeshara*, iron and *Triphala* powder mixed with cow-dung juice make an excellent paste for reviving normal colour in skin.

Roots of *Dhyamaka*, *Ashvattha* and *Nichula* (*Barringtonia acutangula* Linn), *Iac*, *Gairika* (red-ochre), *Nagakeshara* and *Kaseesa* - These restore the natural colour of the skin.

The hairless spots are smeared with oil and dusting with the ash of skin, hair, hoof, horns and bone of quadrupeds, reproduces hairs. The treatment of sixteen complications of wounds has been mentioned in their respective contexts

MATERIALS

This study was a literary review. The materials for data were collected from the Ayurveda Samhitas, Journals, Magazines, internet available in institutional library of Ahalia Ayurveda Medical College, Palakkad.

DISCUSSION

- *Vrana* (ulcers) are broadly classified into two types viz. *Nija* (endogenous) and *Agantu* (exogenous).
- The treatment of both types of ulcers is based upon the *Dosha* dominance.
- Endogenous ulcers are caused due to vitiation of *Dosha* located in external pathways.
- The clinical features of *Vata* dominance in ulcer are stiffness, hardness on touch, scanty exudation, excruciating and pricking pain with throbbing and

blackish discoloration. It should be treated with *Sampoorana* (filling of ulcer cavity), intake of unctuous substances (oleation therapy), unctuous fomentation and poultices, ointments and sprinklings.

- The clinical features of *Pitta* dominant ulcer are excessive thirst, unconsciousness, fever, sweating, burning sensation, impurities at the site of ulcer, tearing and foul smell with discharge pus from ulcer. The treatment includes anointing and sprinkling with cold drugs, intake of sweet and bitter drugs, intake of ghee and purgation.
- The clinical features of *Kapha* dominance in ulcer are sliminess, heaviness, unctuousness, numbness, with mild pain, paleness in colour, little slough and prolonged healing. It is treated with anointing and sprinkling with astringent, pungent, dry and hot drugs as well as fasting and digestive measures.
- The two types of ulcers are further divided into twenty types on the basis of distinctive features. Their examination can be done by three ways; signs of excess vitiation at site of ulcer are of twelve types, eight locations, fourteen types of discharges, sixteen complications, twenty four defects and thirty six therapeutic measures.
- Skin, blood vessels, flesh, fat, bone, ligament, vital parts and viscera are involved in the pathogenesis of ulcer.
- The treatment of ulcer is done in two ways viz. 1. Systemic treatment (internal administration of medicine) and 2. Local treatment of ulcer. The treatment is done with drugs that promote healing, purify body and local site of ulcer.
- The first principle of management of ulcer is body purification through therapeutic emesis, purgation, *Shastra karma* (surgical intervention) or *Basti* (medicated enema) after assessment of condition because the ulcers get healed quickly in those with cleansed body.
- The thirty six measures for treatments of ulcers are those for pacification of swelling, six types of surgical operations, pressing, refrigerating, uniting, fomentation, pacification, probing, cleansing, healing, cleaning paste, healing paste, cleaning oil, healing oil, two types of covering with leaf, two types of bandaging, diet, elevation, two types of cauterization, depression, hardening fumigation, softening fumigation, hardening paste, softening paste, powdering, colorization, healing, repillatory.
- At first, bloodletting therapy is done first to reduce swelling in ulcer. *Upanaha* (hot poultice) and *Patana* (incision) are done according to stage of ulcer.
- Six types of surgical treatments are incision, puncturing, excision, scrapping, scarification and suturing.
- The contraindications in ulcer patients include salt, sour, pungent, hot, burning and heavy food and drinks, sexual intercourse. Food and drinks that are not too cold, heavy and fatty, non-burning, according to the nature of ulcer are beneficial. Day-sleep is not suitable in these patients.
- Fractured bone and dislocated joints should be set correctly comparing with its counterpart. Setting with firm pad-bandages and splints, it should be immobilized without any discomfort by binding with cloth pieces dipped in plenty of ghee..

Classification of ulcers and causes

The ulcers are of two types i.e. *Nija* and *Agantuja*, another classification is clean and infected wound. *Nija vrana* (endogenous ulcer) are caused by vitiation of *Dosha* in the body or due to disease process. The term *Shareera deshotha* (ie. endogenous in origin) is used for morbid factors occurring in the body that cause *Nija vrana* (i.e. endogenous ulcer). While *Agantuja vrana* (exogenous ulcer) are caused by external factors (trauma or surgical intervention) like wound caused by stab injury, poisons, fire and sharp weapons or excessive tying of that organ (*Bandha*) etc. In exogenous ulcers, vitiation of *Dosha* occurs later. *Nija vrana* i.e. *Vataja*, *Pittaja*, *Kaphaja*, *Raktaja* and *Sannipataja*, are caused due to faulty habit, mode of living and seasonal variation. These

vitiated *Dosha*, after a series of pathological processes (*Shad-kriyakala*) get lodged at particular site resulting in the formation of *Vrana*.

Classification of wounds as per contemporary medical science ^[28]

1. Open & Closed Wounds
 - (a) Open Wounds – These are wounds that are open to the environment outside and have exposed underlying tissue.
 - (b) Closed Wounds – these sustain an injury that does not reveal the underlying tissue or organs
2. Acute & Chronic Wounds
 - (a) Acute Wounds – These Wounds heal with out any complications with in a few weeks of injury.
 - (b) Chronic Wounds – these Wounds are associated with an underlying condition and take longer time to heal.
3. Clean & Contaminated Wounds
 - (a) Clean Wounds - These Wounds are free from debris or foreign materials inside.
 - (b) Contaminated Wounds - These Wounds contain foreign materials like Bacteria, Fungi or Dirt inside them.

The Stages of Wound Healing –

1. Inflammatory Phase –

In this stage, the body responds to the Wound naturally (inflammation) and forms a clot to stop the bleeding. Blood arteries widen to allow vital cells to enter the injured area, such as antibodies, white blood cells, growth hormones, enzymes and nutrition. These cells produce the 'inflammation' that gives the phase its name, swelling, heat, discomfort and redness.

2. Proliferative Phase –

The Wound is reconstructed at this point. As a new blood vessel network is developed to ensure that the tissue has enough oxygen and nutrients, the wound shrinks. The tissue is pink or crimson has an irregular texture and does not bleed readily in the healthy stages of wound healing. An infection may be indicated by dark tissue. New skin cells resurface the damage as the Proliferative stage is coming to a close.

3. Maturation Phase –

the scar starts to repair at this point as the Wound completely closes. The 'remodeling' process typically starts about 21 days after an injury and can last for a year or longer. However, the healed wound area will always be weaker than the surrounding unharmed skin, typically recovering only 80 % of the initial tensile strength.

When the wounds continues in Phase 1 (inflammatory phase), the wound is called as a Chronic wound.

Factors that affect Wound Healing –

1. Age –

Age affects every function in the body. This includes the functioning of internal systems and skin. Everything slows down with age and so does the process of healing. with age the skin becomes thinner and the body exhibits a reduced inflammatory response, making it more susceptible to injury and more likely to heal slowly after an accident.

2. Nutrition –

The right diet is essential for optimum healing. If you don't get enough nutrients for cell development and repair, a Wound won't heal properly.

3. Obesity –

Anyone who is 20 % or more above their optimal body weight has a higher risk of developing an infection when that Wound is healing.

4. Repeated Wounds –

the body's defense mechanisms will be constrained and cause

a sluggish rate of Wound healing, if having numerous wounds or had a serious injury (from surgery).

5. Skin –

For skin to survive needs enough liquid and moisture. The dry skin particularly in old people have the risk of frequent skin lesions, infections and thickening. All of these conditions will slow the healing of wounds. Maintaining an ideal amount of skin moisture is essential for the healing of wounds, but if the skin is over wet, there is a danger of developing maceration and infections.

6. Chronic conditions –

the body's innate capacity to recover is directly impacted by chronic disorders. Cardiovascular disorders are among the most harmful, although Diabetes and immune system disorders can also influence Wound healing.

7. Medications –

The immunosuppressant may weaken the immune system and increase the risk of infection, while drugs like anticoagulants have the ability to interfere with blood clotting.

Perspective –

The Wound healing is a set of processes that involve all internal body mechanisms. The healing of the wound will be delayed even one process is hindered. Another important factor related to Wound healing process is the life style. So a proper healthy life style will intum promote Wound healing. in Ayurveda the life style is the key to all healing processes in the body. the healing may be associated with a wound or a general condition.

Step 1 – Poorvakarma

Prior purification process by *Snehana* and *Svedana* for stimulating body to release the toxins.

Step 2 – Pradhanakarma

Pancha Shodhanakarma
Vamana (Therapeutic Emesis)
Virechana (Therapeutic Purgation)
Basti (Therapeutic Enema)
Nasya (Nasal medicine administration)
Raktamokshana (Bloodletting)

Step 3 – Paschatkarma

Balancing lifestyle to maintain a healthy body and body functions.

Pancha Shodhanakarma initiates the body's innate healing capacity and also render the body clean by itself. It is evident that the cleansing of the body is initiated by *Pancha Shodhana* therapy. when an individual is suffering from a non-healing ulcer which are specifically caused by due to vitiation of *Vata*, *Pitta* and *Kapha* *Dosha*, the *Pancha Shodhana* therapy supports in starting Wound healing process. With the *Shodhana* process once the body is cleansed, the Wound healing process will be completed with out any hindrance.

Benefits of Pancha Shodhana Therapy in Non-Healing Ulcers–

1. Eliminate toxins from whole of the body and mind
2. Restores constitutional balance by improving the health of an individual
3. Strengthens the immune system and becomes strong enough to resist illness.
4. Reverses the negative effects of stress, which affects the healing process.
5. brings deep relaxation and well-being to an individual.

Outcome after *Pancha Shodhana* Therapy in Chronic Non-Healing Ulcers -

- a) Decrease in inflammation
- b) Reduction in burning sensation in Wound site.
- c) Decrease in the secretion of pus
- d) Significant relief in pain
- e) Increased appetite
- f) Complete stoppage of pus formation through wound lesions

Perspective –

The Allopathic medical system treats Ulcers by employing the intake of medicines like broad spectrum antibiotics, omeprazole, lansoprazole, phenytoin, etc. the treatment is more symptomatic. Over a period of time, the body become unresponsive to such medicines. This may be due to conditions like Diabetes.

Ayurveda focuses on the root cause of the disease, finding out the *Dosha* involvement in non-healing ulcers and treat accordingly.

Investigations and their clinical interpretation in brief

The clinical features of ulcers are ulceration /discontinuous of skin, discharge (pus/blood/ serum), bad odour, different size, painful/painless ulcers. The above symptoms are described by *Acharya Sushruta* (*Gandha, Varna, Srava, Vedana, Akruiti*). On the basis of which kind of ulcer (varicose ulcer, diabetic ulcer, arterial ulcer, bedsores, leprosy ulcer, rodent ulcer, etc.) the symptoms may vary. In all types of ulcers on the basis of history and clinical examinations the following investigations play important role in diagnosis and prognosis of the Ulcer. TLC (Total leucocyte count), Hb% , Serum creatinine, BSL (Blood sugar level) swab culture, X-ray of affected part if chronic ulcer. If TLC are increase than normal range suggest the acute infection. if Hb% is low then the ulcer will heal delay due to hypoxia to the tissue. If serum creatinine is increased that might be due to kidney problem which hampered healing of ulcer. In diabetic patients BSL assessment is important for healing as glucose laden tissue are reluctant to heal. Swab culture of wound discharge is necessary to know the organism. Lastly s-xray is essential to know extension of wound up to bone/osteomyelitis.

Complications of ulcer

If ulcer is not treated properly it may lead to local and systemic infection leading to septicemia. The tissue necrosis leads to gangrene which further need to amputation.

Causes of non-healing

Two factors mainly affect the process of wound healing viz. local factors and systemic factors.

Local factors are infection, necrosis, foreign body, vascular insufficiency, lymphatic obstruction, continuous movement of part. Systemic causes include old age, protein deficiency, vit-c and zinc deficiency, diabetes mellitus.

Treatment of *Vrana* (ulcers)

Purification measures

Purificatory measures eliminate toxic material from body and improve healing process of ulcer. In case of endogenous ulcer removal of morbid matters (i.e. *Doshaja*) emesis through upward route, purgation through downward route are advised. Other purificatory measures like oleation therapy, sudation therapy should be done prior to emesis, purgation etc. For local purification of ulcer, venesection and *Vrana basti* should be done. *Raktamokshana* is an important modality indicated predominantly in local vitiation of *Rakta* as in *Dooshhta vrana*. So along with emesis and purgation bloodletting is also important treatment modalities with the help of *Jalauka* (leech application), vein puncture etc.

Selection of therapeutic measures is done as per condition of *Vrana* and patient.

Thirty six treatment measures

Thirty six types of therapeutic measures are described for the treatment of ulcer. Sixty types of treatment measures are described under the head of *Shashtiupakrama* regarding ulcer treatment. It is not necessary that all the thirty six or sixty therapeutic measures have to be applied in treating an ulcer. I A patient at a time 1 or 4 type of procedures are essential in single case of *Vrana* according to condition of the wound

In early stage of ulcer only inflammation appears. At this stage bloodletting should be done to break the further manifestation of ulcer. Purificatory measures should be performed in excessively aggravated *Doshas* while lightning measures should be adopted if *Dosha* are less aggravated. In the beginning of oedema, therapeutic measures aimed to alleviate aggravated *Vata* followed by other *Dosha* viz. *Pitta* and *Kapha* are advised. Application of various pastes made of *Vijaya, Madhuka, Veera, Bisagranthi* etc. also reduce oedema. Oedema reducing dietary regimen like light food and food that does not cause burning sensation (*Avidahi*) should be followed.

Indications and process of six fold surgical procedures

Six types of surgical procedures are described for treatment of ulcer such as *Patana* (incision), *Vyadhana* (puncturing), *Chhedana* (excision), *Lekhana* (scrapping), *Pracchana* (scarification) and *Seevana* (suturing). *Patana* procedure described by *Acharya Charaka* is same as for *Bhedana* by *Acharya Sushruta*. Any similar or new procedure can be applied in wound management as per the surgeon's freedom.

Bandaging material, methods and its applicability in *vrana* (wound)

Bandaging of wound is very important as it stabilizes wounded part, prevents external injury, prevents contamination from external sources and enhances healing process. Bandaging should not be too tight, nor too loose. Act of bandaging may be from right or left side while others have mentioned fourteen types and fifteen types.

Diet: Wholesome and unwholesome *aahar-vihar* and ulcer healing promoters

Lavana is *Vishyandi* (producing more secretions from tissues); it aggravates *Kapha* and *Pitta* and mitigates *Vata*.

Due to *Kapha* and *Pitta* vitiating properties it causes sliminess (*Kledana*) and burning pain. Excessive *Lavana, Amla* and *Katu rasa* will provoke *Vata dosha* and may produce various types of pain. *Vidahi* food also leads to burning sensation due to *Srotorodha* while sexual intercourse leads to *Dhatukshaya* and aggravates.

Day time sleep causes *Srotorodha* and gives rise to vitiation of *Kapha* that leads to swelling. Elevation of depressed ulcer is very important aspect of healing process. In Ayurvedic classics *Stanya janana* (galactagogue), *Jeevaneeya* (life promoters e.g. vitamins) and *Brimhaneeya gana* (nourishing drugs) are described. All these drugs have nutritional value (*Dhatu poshana*) that helps in ulcer healing.

Indications and contraindications of *Agnikarma* (cauterization) in various disorders

Agni karma (cauterization by application of heat) is used as precaution for excessive bleeding ulcers, excision of hanging flesh, *Kaphaja granthi*, goitre and in stiffness (associated with *Vata*) etc. *Agnikarma* has *Ushna guna* (hot property) which is opposite to *Vata* and *Kapha*. Due to heat, vasodilation leads to alleviation of *Srotorodha* resulting in proper vascularity to organ or part. *Dahakarma* (cauterization) causes constriction of blood vessels so prevents bleeding from ulcer. Cauterization is performed with the help of many substances like unctuous or ununctuous substances etc by many ways e.g. Small spot (*Bindu*), shape of ring (*Valaya*) etc depending on

