

A REVIEW ON INSIGHTS OF *SUSHRUTOKTA DAGDHA VRANA*

Dr. Poornima Jalawadi\*

Assistant Professor, JSS Ayurveda Medical College. Mysuru.

\*Corresponding Author: Dr. Poornima Jalawadi

Assistant Professor, JSS Ayurveda Medical College. Mysuru.

Article Received on 23/07/2020

Article Revised on 13/08/2020

Article Accepted on 03/09/2020

**ABSTRACT**

Burn injury has been associated with the evolution of human civilization since time immemorial. Burn injuries has always been faced by human in different era with change of mode injury from past to present. Unlike other diseases the basics of burn injury remains more or less same. The basic concepts and principles of management of burn injury is described in Ayurveda are very much relevant and useful in this era of modern surgery. Sushruta Samhita, the treasure of surgical knowledge of ancient Indian civilization, is a rich source of information regarding burn injury, assessment and management. The reviewed data evaluated scientifically to make it usable in the modern era of surgery, So the benefits of Ayurveda can be introduced in modern era of burn care.

**KEYWORDS:** Ayurveda, Dagdha vrana, Burn wound, Susrut Samhita.

**INTRODUCTION**

History of Burn wound would be as old as the invention of fire by about 400,000 years ago. The control of fire, for the purpose of cooking, warmth or protection is considered as an important step in the culture. Hence, the burn wound has been managed since the time immemorial.<sup>[1]</sup>

A systemic approach for burn wound (*Dagdha Vrana*) care is documented in *Sushruta Samhita* (600 BCE), written by *Sushruta* who is considered as father of surgery.<sup>[2]</sup> Various other *Acharyas* like *Charaka*, *Vagbhata* have mentioned about the *Dagdha Vrana*. The *Sushruta's* classification, *samprapthi* & protocol of treatment for *Dagdha Vrana* still holds good for today's clinical practice. *Sushruta* explains the "*Dagdha Vrana*" in the 12<sup>th</sup> chapter of *Sutrasthana*.

Classification of the *Dagdha Vrana* depending on the details available in *Sushruta Samhita* can be divided into following categories:<sup>[3]</sup>

**1. Depending on Dravya**

- Snigdha Dagdha* (Burns caused due to hot liquid)
- Rooksha Dagdha* (Burns caused due to hot metals/surfaces)

**2. Depending on level of tissue/skin destruction in Depth**

तत्र प्लुष्टं दुर्दग्धं सम्यक् दग्धं अतिदग्धं चेति चतुर्विधं अग्निदग्धं। Su. Su 12/16

- Plushta* (very superficial, incomplete burn)
- Durdagdha* (a little deeper burn than *Plushta*)

- Samyak Dagdha* (deep burn with complete destruction of twak)
- Ati Dagdha* (a very deep burn with destruction of deeper tissues)

**3. Depending upon Cause**

- Therapeutic *Dagdha Vrana* – *Agni Karma*, *Kshara Karma*
- Non-Therapeutic *Dagdha Vrana*- *Pramada Dagdha* (Iatrogenic), *Dhoomopahata* ( Burns caused due to Smoke inhalation), *Indravajrayudha Dagdha* (Burns due to lightning), *Sheeta Varshaanila Dagdha* (Burns caused due to excessive cold), *Atitejasa Dagdha* (Burns caused due to excessive ), *Ushna Vata Aatapa Dagdha* (Sun Burns)In contemporary science, the types of burns is described as,

**1. Thermal injury**

- Scald-spillage of hot liquids
- Flame burns
- Flash burns due to exposure of natural gas, alcohol, combustible liquids
- Contact burns-contact with hot metals/objects/materials

**2. Electrical injury****3. Chemical burns-acid/alkali****4. Cold injury-frost bite****5. Ionising radiation****6. Sun burns<sup>[4]</sup>**

This classification and description of Burn injury is almost similar to that of Sushrtha's explanation.<sup>[3]</sup>

### 1. *Snigdha Dagdha* (Scalds<sup>[4]</sup>)

स्निग्धं सर्पिरादिः ..

When the burn injury is caused by hot liquids like *Sarpi* (Ghee), *Taila* (oil), *Jala* (water), *Madhu* (Honey), *Madhuchishhta* (Bee wax) etc., it's called as *Snigdha Agni Dagdha*.

As the heat retention capacity of liquids is more, the deeper tissues are likely to be damaged more in scalds. Hot water & oil are the most common type of burns in our clinical practise. The water at 60°C can cause full thickness burn in 3 seconds and at 69°C can cause full thickness burn at 1 second. Freshly brewed coffee will be about 82°C which may lead to full thickness burn. Scalds from hot oil may lead to full or partial thickness burn as they will be in the range of 200°C.<sup>[6]</sup>

### 2. *Rooksha Dagdha* (Contact Burns<sup>[4]</sup>)

रूक्षं काष्ठपाषाणलोष्टादिः ..

When the burn injury is caused by hot *Kaashtha* (wood), *Paashana* (Stone), *Loshta* (clay), *Loha* (Metal) etc. its called as *Rooksha Agni Dagdha*.

One may come across with the Contact burns during daily practise, either in the form of improper agnikarma chikitsa or by the burn caused by exhaust pipe of motor cycle, latter being full thickness burn in most of the causes.

### 3. *Plushta Dagdha*

तत्र यद्विवर्णं प्लुष्यतेऽतिमात्रं तत् प्लुष्टं॥ (Su.Sam.Su. 12/16)

When the source of heat causes only discoloration and pain at the site is called as *Plushta Dagdha*<sup>5</sup>. It's a superficial burn. To relate, we can say where there will be widened zone of hyperemia than the zone of necrosis in the Jackson's model.<sup>[4]</sup>

### 4. *Durdagdha*

यत्रोत्तिष्ठन्ति

स्फोटास्तीवाश्चोषदाहरागपाकवेदनाश्चिराच्चोपशाम्यन्ति तदुद्वेगं॥

The source of heat causes: a) formation of blisters (sphota) b) severe burning sensation, redness, suppuration, pain. c) burns wounds take long time to heal<sup>[5]</sup>

### 5. *Samyak Dagdha*

सम्यग्दग्धमनवगाढं तालवर्णं सुसंस्थितं पूर्वलक्षणयुक्तं च॥

According to *Dalhana*:

- अनवगाढम् अतिदग्धलक्षणरहितम् – it will be devoid of *atidagdha laxanas*
- सुसंस्थितम् अत्युन्नतावनतादिदोषवर्जितम्। - it will be neither too depressed nor too elevated.
- पूर्वलक्षणयुक्तं चेति  
इमांससिरास्नायुसन्ध्यस्थिदाहलिङ्गयुक्तम्।
- *Twak- twak sankocha*
- *Mamsa- kapota varna, alpa shwayathu, vedana, shushka sankuchita vana,*
- *Sira snaayu- Krishna vana, Unnata Vrana, Sraava Sannirodha*
- *Sandhi Asthi- Rooksha, Aruna, Karkasha, Sthira Vrana.*

### 6. *Ati Dagdha*

अतिदग्धेमांसावलम्बनंगात्रविश्लेषःसिरास्नायुसन्ध्यस्थिव्यापादनमतिमात्रं ज्वरदाहपिपासामूर्च्छाश्चोपद्रवा भवन्ति, व्रणश्चास्य चिरेण रोहति, रूढश्च विवर्णो भवति॥(Su.Sam.Su. 12/16)I

When there is *Maamsavalambana* (hanging of muscles which are destroyed), *Gaatra Vishlesha* (Breaking pain in body), Excessive destruction of *Sira, Snāyu, Sandhi, Asthi*, Complications like fever, burning sensation, thirst, loss of consciousness (signs of shock) manifest its called as *Ati Dagdha Vrana*.<sup>[5]</sup> These are also called as *Pramaada dagdha*.

In contemporary science, depending on the thickness of skin involved,

**a. First degree-** Here the epidermis looks red and painful, no blisters, heals rapidly in 5- 7 days by epithelialisation without scarring. It shows capillary filling.

**b. Second degree:** The affected area is mottled, red, painful, with blisters, heals by epithelialisation in 14-21 days.

Superficial second degree burn heals, causing pigmentation.

Deep second degree burn heals by causing scarring, and pigmentation. Sensation is present but no blanching.

**c. Third degree:** The affected area is charred, parchment like, painless and insensitive, with thrombosis of superficial vessels. It requires grafting. Charred, denatured, insensitive, contracted full thickness burn is called as eschar. These wound must heal by re-epithelialisation from wound edge.

**d. Fourth degree:** Involves the underlying tissues- muscles, bones.<sup>[4]</sup>

So, sum up we can co-relate as follow:

Sushrutokta Dagdha Vrana Types	Classification of Burn depending on the Skin Involved
<i>Plushta</i>	First degree
<i>Durdagdha</i>	Second degree
<i>Samyak Dagdha</i>	Third degree
<i>Ati Dagdha</i>	Fourth degree

*Dhoomopahata* (Flame Burns)- Signs of persons exposed to excessive smoke during burns due to fire, could result in:

1. Dyspnoea 2. Excessive sneezing 3. Abdominal distension 4. Excessive cough 5. Burning sensation in eyes 6. Redness of eyes 7. Presence of smoke in breath 8. Inability to perceive smell (anosmia) 9. Inability to perceive taste 10. Inability to hear sounds 11. Thirst, burning sensation and fever 12. Loss of consciousness.

This can be effectively treated by *Vamana*, *Kavala Graha*, *Shiro Virechana*, where as *Ati tejasadagdha* and *indra vajraanila dagdha* cannot be treated making it *asaadhya*.

Among any kind of burn injury, will result in vitiation of rakta, pitta which in turn vitiates rasa dhatu and creates a formation of blebs. The plushta is better treated by ushna chikitsa to enhance the blood circulation. This explains the zone of stasis in Jackson which helps us to understand.

#### Treatment

**Treatment of Plusta Dagdha Vrana:** Burnt areas should be made warm by Agni and application also done is by Ushna Veeryayukta Dravyas. Due to the contact with the fire the body becomes more warm and so also the blood. In this condition if cold measures are employed or cold water is sprinkled it may lead to the excessive Skandana of blood (Viscosity). So for this reason one has to use warm water for washing and drinking. Cold water and cold thing should never be used.

**Treatment of Durdagdha Vrana:** In this type both cold and warm measures has to be employed. But the Ghee, paste or any external application as well as medicine which is used for Seka should contain Sheeta Veerya Dravyas.

**Treatment of Samyak Dagdha Vrana:** In this type for the external application Vamsha Lochana, Gairika, Plaksha and Guduchi are made into paste and then mixed with Ghee and used. Flesh of the animals of dry, marshy and aquatic places are mixed and triturated well and then used for the external application. If there is continuous burning sensation of the local part or all over the body then one has to treat according to the line of treatment of Pittaja Vidradhi.

The treatment adopted in case of Pittaja Vidradhi are:

1. The paste prepared by sugar, laja, Yastimadhu, Sariva triturating with milk can be used for external

application. In case of non-availability of Sariva one can use Ksheerkakoli, Chandana and Usheera. Even the Ghee prepared with warm or cold decoction of above said drugs along with milk and cane juice or Jeevaneeya group drugs with sugar can be used parisheka.

- Application of paste prepared by Yastimadhu triturating with milk and mixed with Ghee has to be employed after washing the wound with decoction prepared by Ksheeri Vruksha like Vata, Udumbara and aquatic plants like Prapaundarika etc. then bandaging is to be done. But in case of Dagdha vrana bandaging can be avoided.
- The Ghee prepared out of Propaundarika, Manjista, Yastimadhu, Usheera, Padmaka and Turmeric powder boiled with milk can be used in healing the wound. The Grita prepared by the leaves of Ksheera Vidari, Prishnaparni, Manjista, Lodhra, Chandana and Vata can be used as good healing agent. Even bark of plants can be used.
- Karanjadya ghrita can also be used in Samyak Dagdha Vrana. Honey and Ghee mixed together can also be used for application.

**Treatment of atidagdha vrana:** According to sushruta in the case of a burn of a Ati-dagdha type, the loops or dangling integuments (skin) and flesh should be removed, and cold applications should be made over the ulcer. Then the affected part should be dusted over with pulverized Sali rice, or a plaster composed of the pulverized skin of Tinduki and clarified butter pasted together should be applied over its surface. The affected part should be covered over with the leaves of Guduchi or lotus, or other aquatic plants. So first debridement of charred muscles should be done and then all the cold measures should be employed. Paste prepared out of powder of Shali rice and decoction of bark of Tinduka, which is mixed with milk, can be applied. Then the wound should be covered with leaves of Guduchi and Padmaka.

**Vranitagara:** Vranitagara should be Shreshtha and free from dust, it should be built in such a way that direct sun light and air should not enter the room and that it is comfortable for vranita. The wards, the beds provided to the patients should be nice, well laid, provided with comfortable mattress and patients head end should be towards east. He should be associated with his well wishers. They should be able to console him in different ways. It should be advised to the patient not to sleep

during the day; as it gives rise to a sensation of itching, heaviness in the limbs, edema, pain, redness and copious discharge from the wound. Patient should carefully protect the wound while carrying on his own activities, such as getting up, lying down, changing sides as well as moving and speaking loudly etc. and even death may occur if patient indulges in sexual intercourse.<sup>[8]</sup>

#### **Pathyapathaya**

It helps wound to heal rapidly in one who takes boiled old rice or bland, warm semi-solid diet in small quantities and meat of wild animals. Tanduliyaka, Jeevanthi, Sunishannaka, Vastuka, tender Raddish, Brinjal, Patola and Karvellaka should be fried in Ghee and mixed with Dadima, Amalaki, Salt and other substances with similar properties.<sup>[7]</sup>

#### **CONCLUSION**

Historically, burn care could be related with the invention of fire, but a methodical, vivid explanation is documented in Sushruta Samhita. It is on par with the contemporary science, so that it holds good for Jackson's model for burns injury, degrees of burn and methods of treatment. Adoption of these techniques can bring major changes in the management of wound management.

#### **REFERANCES**

1. [https://simple.wikipedia.org/wiki/Control\\_of\\_fire\\_burn\\_early\\_humans](https://simple.wikipedia.org/wiki/Control_of_fire_burn_early_humans)
2. [https://en.wikipedia.org/wiki/Father\\_of\\_surgery](https://en.wikipedia.org/wiki/Father_of_surgery)
3. Sushruta. Sushruta Samhita Shastri A. Sushruta Samhita, Part-I (Sutra Sthana), Chaukhambha Sanskrita Sansthan, Varanasi, India, 2001.
4. Sriram Bhat M. SRB's Manual of Surgery. Jayapee Publishers, 2018; 122: 1235.
5. Rajaneesh Giri. Textbook on Shalyatantra. Chaukhambha Orientalia, 2018.
6. F. Charles Brunnicardi. Schwartz's Manual of Surgery. Mc Graw- Hill Publishers, 2006; 138: 1345.
7. Yashwant Dighe Sujata et al: Agnidagdha - A Review in Sushrutasamhita, 2016; 2: 6.
8. Sushruta Samhita Shastri A. Sushruta Samhita, Part-I (Sutra Sthana Chapter-19), Chaukhambha Sanskrita Sansthan, Varanasi, India, 2001.