



Review Article

A CRITICAL STUDY OF *DAGDHA VRANA* (BURN INJURY) IN AYURVEDIC SYSTEM OF MEDICINE

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ABSTRACT

In Ayurvedic classics use of medicinal, surgical and para surgical modalities for treatment of different ailments are given. Para surgical procedures like *Agnikarma*, *Ksharakarma* and *Raktamoksan* were commonly used by Ayurvedic physicians. During the therapy like *Agnikarma* there were accidental burn injuries known as *Pramad dagdha* or *Ittartha dagdha*. According to the nature of the cause of the burn it is of two types *Snigdha* and *Ruksa*. Acharya Sushruta has elaborately described the types, clinical features, treatment principles and *Upadrava* (complications) of *Dagdha vrana*. Acharya Charaka has mentioned burn wounds as *Agantuja vrana*. *Dagdha vrana* (burn injury) and its management were also found in various treatises of Ayurveda written in different time periods. The paper is a review of types, clinical features and management of the *Dagdha vrana* (burn injury) found in different Ayurvedic texts.

**KEYWORDS:** *Sushruta*, *Dagdha Vrana*, Burn Injury.

INTRODUCTION

Burn injuries are not new to mankind and it has prevailed since time immemorial. Ayurveda is an ancient science of treatment which has been in practice since 5000 years back and has description of different treatment modalities. The description of types, clinical features, treatments and complications of *Dagdha vrana* written in Ayurvedic classics are quite similar to burn injury describe in modern medicine.

*Dagdha vrana* (burn wound) which may be accidental or may be caused during para surgical procedures like *Agnikarma*. Acharya Sushruta, the pioneer of Indian surgery has vividly described *Dagdha vrana* in the chapter '*Agnikarma vidhi adhyaya*' in *Sutrashana*. In *Charak Samhita* *Dagdha vrana* is mentioned as *Agantuja vrana* in the chapter '*Dvivraniya adhyaya*' of *Sutrashana*. In *Ashtanga Samgraha*, *Astanga Hridaya*, *Yogaratanakara*, and *Harita Samhita*, *Dagdha vrana* has been discussed briefly. *Bhavaprakash* has mentioned treatment according to types of *Dagdha vrana*.

AIM AND OBJECTIVE OF STUDY

Critical review of *Dagdha vrana* (burn injury) found in Ayurveda.

MATERIAL AND METHODS OF STUDY

1. For this critical analysis of the literature for burn in Ayurvedic system of medicine textbook of both *Brihatrayee* and *Laghutrayee* along with

*Yogaratanakara*, *Bhaisajya Ratnavali* and *Harita Samhita* are taken into consideration.

2. The data regarding *Dagdha vrana* (burn wound) related to etiology, classification, pathophysiology, principles of treatment and management were collected in this study.

All data converted to tabulation for detailed critical analysis. The analytical data compared to each other for critical study.

Review of Literature

*Dagdha vrana* (burn wound) management was found in different Ayurvedic treatises. The Ayurvedic physicians used surgical and para surgical modalities of treatment in their practices among the different para surgical procedures *Ksharakarma*, *Agnikarma* and *Raktamoksan* were popular and successful in the ancient era. During the process of *Agnikarma* (therapeutic burn) different types of *Itarthadagdha* (accidental injury) happened which are basically classified into *Snigdha* (wet) and *Ruksa* (dry)<sup>[1]</sup>. In *Sushruta Samhita* (2<sup>nd</sup> century AD) details classification, clinical presentation, principles of management and detail management according to types were described in the chapter *Agnikarmavidhi adhyaya*. In *Charak Samhita* (2<sup>nd</sup> century BC) in the context of *Agantuja vrana* (traumatic wound) *Agni Dagdha vrana* is mentioned<sup>[14]</sup>. Later on, in *Astanga sangraha* (500 AD) and *Astanga Hridaya* (8<sup>th</sup> century AD) followed the basic treatment protocol of

*Sushruta Samhita*. Keeping intact the basic treatment protocol Sarangadhar, Bhavaprakash and Yogaratnakara describe different kinds of herbal dressing material for burn injury. In 10<sup>th</sup>-12<sup>th</sup> century Acharya Harit gave a brief description on burn wounds and its treatment in his book *Harit Samhita*.

### Types of Dagdha vrana

### Types

Burn wound according to the nature of causative factors of burn.<sup>[1]</sup>

- i) *Snigdha*: caused by oily substance
- ii) *Ruksha*: caused by fire

**Table 1: Distribution of different types of burn found in Samhitas** [3,5,6,7,8,10,]

Samhitas	Plusta	Tuttha	Tuccha	Isaddagdha	Durdagdha	Madhya dagdha	Samyak dagdha	Ati dagdha
<i>Sushruta Samhita</i>	+	-	-	-	+	-	+	+
<i>Charak Samhita</i>	-	-	-	-	-	-	-	-
<i>Astanga Hridaya</i>	-	-	+	-	+	-	+	+
<i>Astanga Samgraha</i>	-	+	-	-	+	-	+	+
<i>Madhav Nidan</i>	-	-	-	-	-	-	-	-
<i>Yogaratnakara</i>	+	-	-	-	+	-	+	+
<i>Bhavaprakash</i>	+	-	-	-	+	-	+	+
<i>Harita Samhita</i>	-	-	-	+	-	+	+	+

### Samprapti of Dagdha Vrana

#### According to Sushruta Samhita

*Rakta* agitated by fire and gets aggravated. *Pitta* also gets aggravated due to similar properties in *Virya*, *Rasa* and *Dravya* with *Rakta*, that is why there were severe pain, excessive burning, quick appearance of blisters, fever and thirst.<sup>[2]</sup>

**Table 2: Clinical features of Dagdha vrana found in different Ayurvedic treatise**

Clinical features	<i>Sushruta Samhita</i>	<i>Astanga Samgraha</i>	<i>Astanga Hridaya</i>	<i>Yogaratnakara</i>	<i>Harita Samhita</i>
<i>Plusta/Tuttha/Tuccha</i>	<i>Vivarna</i> (discoloration), <i>Plusyateatimatram</i> (severe burning pain) <sup>[3]</sup>	<i>Vivranam</i> (discoloration) <i>Usyateatimatram</i> (severe burning pain) <sup>[7]</sup>	<i>Twakvivarna</i> (discoloration of skin), <i>Oshyateathartha</i> (severe burning pain), <i>Nasa sphotasamudbhava samudbhava</i> (absence of blisters) <sup>[6]</sup>	<i>Vivarnamatram</i> (discoloration) <sup>[8]</sup>	-
<i>Durdagdha</i>	<i>Sphota</i> (blisters) <i>Tibra osha</i> , <i>Daha</i> , <i>raga</i> , <i>Paka</i> (severe Pain, redness, suppuration) <i>Vedanachirashya Upasamyati</i> (pain lasting for long duration) <sup>[3]</sup>	<i>Sphota</i> (blisters), <i>Dahativra osha</i> (severe burning pain) <i>Daha</i> (burning and <i>ruja</i> (pain), <i>Chirasyaupasamyati</i> (require long time to heal) <sup>[7]</sup>	<i>Sphota</i> (blister), <i>Dahativra osha</i> (severe burning pain) <sup>[6]</sup>	<i>Sphota</i> (blisters), <i>Tivradaha ragapaka</i> (Severe burning sensation, redness, suppuration) <i>Vedanachirasaupa samyati</i> (pain lasting for long duration), <sup>[8]</sup>	-

<i>Samyak dagdha</i>	<i>Anavagraham, Pakwatalaphalavarna</i> (resembles like colour of ripe palm tree fruit), <i>Susamsthitam</i> (neither elevated nor depressed) <sup>[3]</sup>	<i>Pakwatalaphalavarna</i> (colour of ripe palm fruit), <i>Samasthita</i> (neither elevated nor depressed) <sup>[7]</sup>	<i>Sabdhallasikaanvitam</i> (emergence of cracking sound accompanied with lymph), <i>Pakwatalakapotwa</i> (colour resembling a ripe tala fruit) <i>Suroham</i> (good healing), <i>Na ativedana</i> (not much severe pain) <sup>[6]</sup>	<i>Anavagarham Pakvatalaphalavarna</i> (colour of ripe fruit of palm tree), <i>Susamsthitam</i> (neither elevated nor depressed), <i>Purvalakshana yukta</i> <sup>[8]</sup>	<i>Nirdosha</i> , of 4 Types <sup>[10]</sup>
<i>Atidagdha</i>	<i>Mamsaavalamba, Gatravislesa</i> (sloughing out of tissues), <i>Sira snayu sandhi asthi vyapadatimatram</i> (injuries of vessels, ligaments, joints, and bones), <i>Jwar</i> (fever), <i>Daha</i> (burning sensation), <i>Pipasa</i> (thirst), <i>Murcha</i> (fainting), <i>Chirenubhati</i> (delayed wound healing) <sup>[3]</sup>	<i>Ugraruja</i> (severe pain) <i>Dhumayan</i> (feeling of hot smoke coming out), <i>Mamsapralamban</i> (muscles cound out), <i>Sirayapad</i> (disorder of vessels), <i>Gambhirvranata</i> (wound become deeper), <i>Jwar</i> (fever), <i>Daha</i> (burning sensation), <i>Trishna</i> (thirst), <i>Murcha</i> (fainting), <i>Shonitaatipravriti</i> , <i>Upadrava</i> (profuse bleeding and its complication), <i>Krichenaruhati</i> , <i>Rurhaesavivarana</i> (wound heals with difficulty and discolouration even after healing. <sup>[7]</sup>	<i>Mamsaavalamban</i> (sloughing out), <i>Sankocha</i> (contraction), <i>Daha</i> (burning sensation), <i>Dhupan</i> (smoky vision), <i>Vedana</i> (pain), <i>Siradinasa</i> (destruction of vessels etc.), <i>Trishna</i> (thirst), <i>Murcha</i> (fainting), <i>Varanagambhirya</i> (severe wound), <i>Mrityu</i> (death). <sup>[6]</sup>	<i>Twakmamsaavalambanam, Gatravislesa</i> (sloughing of tissue), <i>Sirasnayusandhi vyapaanamati matram</i> (injuries of vessels, ligaments, joints and bones), <i>Jwar</i> (fever), <i>Daha</i> (burning sensation), <i>Pipasa</i> (thirst), <i>Murcha</i> (fainting), <i>Chirenruhati</i> (heals slow), <i>Vivarna</i> (discolouration) <sup>[8]</sup>	<i>Mamsaga, Vata, pitta, Kaphasrita</i> <sup>[10]</sup>
<i>Pittajadaha</i>	-	-	-	-	Skin is destroyed Involvement of rakta and Pitta <sup>[10]</sup>

**Treatment of Dagdha vrana****Table 3: Treatment principle of Dagdha vrana**

Types	Samhitas					
	<i>Sushruta Samhita</i>	<i>Astanga Hridaya</i>	<i>Astanga Sangraha</i>	<i>Yogaratanakara</i>	<i>Bhavaprakash</i>	<i>Harita Samhita</i>
<i>Plusta /Tuttha/ Tucha</i>	<i>Ushna kriya and pratapan</i> <sup>[4]</sup>	<i>Ushna kriya and Pratapan</i> <sup>[12]</sup>	<i>Ushna kriya and Pratapan</i> <sup>[13]</sup>	<i>Ushna kriya and Pratapan</i> <sup>[9]</sup>	<i>Ushna kriya and Pratapan</i> <sup>[5]</sup>	-
<i>Dur dagdha</i>	<i>Sita kriya and Ushna</i>	<i>Sita and</i>	<i>Sita kriya,</i>	<i>Sita kriya, Ushna</i>	<i>Sita kriya,</i>	-

	<i>kriya, Ghritalepan</i> <sup>[4]</sup>	<i>Ushna kriya</i> <sup>[12]</sup>	<i>Ushna kriya and Ghritalepan, Séka</i> <sup>[13]</sup>	<i>kriya, Ghritalepan, séka</i> <sup>[9]</sup>	<i>Ushnakriya, Ghritalepan, Pradeha</i> <sup>[5]</sup>	
<i>Samyak dagdha</i>	<i>Lepa, Pralepa of Gramya, Anupa, Oudakamamsa and treatment of Pitta Vidradhi</i> <sup>[4]</sup>	<i>Lepa and treatment of Pitta vidradhi</i> <sup>[12]</sup>	<i>Lepa, Pralepa of Anupamamsa and line of treatment of Pitta vidradhi</i> <sup>[13]</sup>	<i>Lepa</i> <sup>[9]</sup>	<i>Lepa, Pralepa of gramya, Anupa, Oudakamamsa and line of treatment of Pitta vidradhi</i> <sup>[5]</sup>	-
<i>Atidagdha</i>	<i>Sita kriya, Pralepa and line of treatment Pitta visarpa</i> <sup>[4]</sup>	<i>Line treatment Pitta visarpa</i> <sup>[12]</sup>	<i>Sita kriya, Pralepa and line of treatment Pitta visarpa</i> <sup>[13]</sup>	<i>Sita kriya and Lepa</i> <sup>[9]</sup>	<i>Sita kriya and Pralepa</i> <sup>[5]</sup>	-
<i>Isaddagdha</i>	-	-	-	-	-	<i>Kanji application, Nimbapatra, Tulsi patra, kustha and Dhatriphala application.</i> <sup>[11]</sup>
<i>Madhya dagdha</i>	-	-	-	-	-	<i>Ghritalepa mixed with Madhu, Kustha and Manjistha.</i> <sup>[11]</sup>

## OBSERVATION AND RESULT

The details and etiological factors described in *Sushruta Samhita* were followed in *Astanga Samgaraha* and *Astanga Hridaya*. In *Charak Samhita* only description found was *Dagdha vrana* is of traumatic origin. All the authors classify *Dagdha vrana* depending upon the degree of burn. *Tuttha* in *Astanga Hridaya* and *Tuccha* in *Astanga Samgraha* were mentioned in place of *Plusta* and the rest types of *Dagdha vrana* were of similar name. Almost similar description of clinical features of *Plusta /Tuttha/ Tuccha, Durdagdha, Samyakdagdha* and *Atidagdha* were found in *Sushruta Samhita, Astanga Hridaya, Astanga Sangaraha* and *Yogaratanakara* and may be correlated with 1°, 2°, 3°, and 4° degree of burn in modern medical science. *Harita Samhita* has given less description of *Dagdha vrana*, and has not clearly described the clinical features of *Dagdha vrana*. Treatment principles were also not similar with *Sushruta Samhita*. Treatment principles for four types of burns as mentioned are almost similar in all Ayurvedic classics except little modifications in local applications.

## CONCLUSION

The concept of *Dagdha vrana* (burn wound) was described in Ayurvedic treatise mostly dominated by *Sushruta Samhita*, the pioneer book of

Indian surgery. There is similarity regarding etiology, clinical features, degree of burn with description of burn injury of modern system of medicine.

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**Cite this article as:**

Taifa Rozy, Barman Kumar Pankaj, Medhi Champak. A Critical Study of Dagdha Vrana (Burn Injury) in Ayurvedic System of Medicine. International Journal of Ayurveda and Pharma Research. 2020;8(7):84-88.

**Source of support: Nil, Conflict of interest: None Declared**

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