

**ABSTRACT**

*Ayurveda* is the most ancient science of human civilization. *Sushrutsamhita* is the most important literature of *Ayurvedic* surgery. In *sushrutsamhita* various parasurgical procedures are mentioned in different disease conditions. *Vata* and *kapha* are the dominant *doshas* in these diseases. *Agnikarma* ensures complete cure of disease to avoid recurrence. *Agni* by its *usna*, *sneha gunas* pacifies *vata* and *kapha* and mechanically burns the unwanted tissue, if done directly by *lohashalaka*. In the present study a humble attempt has been made to evaluate the pathophysiology, and mode of action of *agnikarma* and its importance in modern day *ayurvedic* surgical practice. This study concludes that *agnikarma* is a very effective, easy and simple procedure that can be employed as outpatient procedure.

**Key words:** *Agnikarma*, parasurgical procedure, *dagdha*.

**INTRODUCTION:**

*Sushrutsamhita* is the main pillar of *ayurvedic* surgery in which surgical and parasurgical procedures are described. *Susruta* while defining *Shalyatantra* says “*YANTRA SASHTRA KSHARA AGNI PRANIDHANAM*<sup>1</sup>”. *Agnikarma* is true cauterisation. Cautery can also be done by *kshara* also, but *Agnikarma* is better than *kshara* due to complete eradication of pathology<sup>2</sup>. *Sushrut* advises four types of *Agnikarma* and classified burn injury into four grades.<sup>3</sup> *Vagbhata* also described concepts of *Agnikarma*. *Acharya charak* indicated *agnikarma* in *gridhasi* between *kandara* and *gulfa*<sup>5</sup>.

**AIMS AND OBJECTIVES:**

To evaluate, elaborate and discuss the various basic concepts of *Agnikarma* of *sushrutsamhita*.

**MATERIAL AND METHODS:**

The references of *Agnikarma* were collected and compiled from *sushrutsamhita* and other *ayurvedic* classics. We also referred to various modern textbooks of surgery. The various methods of *Agnikarma* are discussed with

their importance in *ayurvedic surgical* practice.

**OBSERVATION:**

*Acharyasushruta* described *yantra* in *sutrasthanam* along with *upyantra* and *anushashastra*. Both *Agnikarma* and *kshara karma* are described under *upyantra* and *anushashtra*. *Acharyasushruta* gives complete description of *Agnikarma* in *sutrasthanam* chapter 12. In the beginning of chapter he mentions that *Agnikarma* is superior to *kshara karma*. The disease treated with *Agnikarma* has no recurrence and there are some diseases where medication, surgery and *kshara karma* are not effective or not possible. *Agnikarma* treats these conditions easily and successfully. Materials used in *Agnikarma*<sup>4</sup> are stated according to use as *pipali*, stool pills of goat, *godant* (teeth of cow), *shar* and *shalaka* are used in the *tvacha gat rog*, *jambosth* and *loha* (metals or alloys) are used for *Agnikarma* in *mamsagat* (muscular area) *rog*, *Madhu*, *guda* and *sneha* is used for purpose of *dahan* in the *Sira* (vessels), *Snayu* (tendon) and *sandhi*(joints) and *Asthisatvadhi*.

Acharya Vaghbata added *pichuvarti*, *suryakant* and wax for the *Agnikarma* purpose. *Agnikarma* is contraindicated in *sarad* and *grishma ritu*, but in emergency it can be performed with due precaution. Patient should be advised *agniviruddha ahar* specially *pichila ahar* prior to procedure. In some conditions patient shouldn't take anything by mouth before procedure. Those conditions are *ashmari*, *bhagandar*, *arsh*, and disease of oral cavity (*mukha gat vyadhi*). Some *acharyas* say that *Agnikarma* can only be employed in *tvacha* and *mamsagatavikar* but *acharya sushruta* stated it can be employed in *sira*, *snayu*, *sandhi* and *asthigatvikara* also. In *tvachadagdha*, *sabdpradurbhav* means production of a sound, *durgandhata* means foul smell and *tvaksankoch* means contraction of skin at the site of *dagdha*. These features of *tvachadagdha*, may be due to skin having more fibrous tissue that after burn produces sound, foul smelling and contraction. In *mamsadagdha*, *kapotvarnata* i.e. colour changes and becomes like pigeon, *alpasvayathu* and *vedna* means less swelling and pain; *shuska sankuchit vranata* means the wound formed during *dagdha* is dry and of small circumference. That may be due to the muscle having less blood and nerve supply than skin tissue producing less pain and swelling. Muscles are pinkish in colour and after burn become blackish. Only that tissue burns which comes in contact of *shalaka*. *Dagdha* of *sira* and *snayuvrana* have features of black colour, less swelling and discharge. This might be due to the coagulation of blood present inside the vessels during *dagdha*. The *dagdha* of *sandhi* and *asthi* show characteristics like *Ruksha*(dry), *karkas* (hard), *lalima* (redness), *katina*(hardness).

This may be due to the less fluid at *sandhi* and *asthi*. In *sirorog* and *netrarog* (*adhimanth*) *dagdha* should be done on eyebrows, frontal and *shankh*(temporal) area. In *vartmgat vyadhi* the *dagdha* should be done on the *lomkoope* of *vartm* covered by wet cloth so the heat does not damage the cornea and conjunctiva. Diseases of *tvacha*, *mamsa*, *sira*, *snayu*, *sandhi* and *asthi* (with severe pain due to vitiation of *vata*) and the chronic ulcers with *mansankur*(small polyps), *granthi* (outgrowths and hardness) are treated with *Agnikarma*. Some diseases like *arsha*, *bhagandara*, *arbuda*, *apachi*, *slipad*, *charmakeel*, *tilkalak*, *aantravridhi*, joint disease, bleeding vessel and sinus tract are treated with *Agnikarma*.

*Acharya sushruta* stated four types of *Agnikarma* on the basis of procedure performed. When *dagdha* is done in circular form it is called *valaya*, when only pointed *dagdha* is done then it is called *bindu*, when *dagdha* is done in the form of straight line then it is named *vilekha*(*rekha*), when a large area is burnt with blunt *dagdha upkaran* then it is called *praatisaran*. *Astanga samgraha* introduces another three kinds of *dagdha* namely *Ardhachandra*, *Swastik* and *Astapad* i.e. semicircular, *swastika* and like octahedral structure.

The patient with *pitta prakriti*, suffering from *raktapitta*, *Atisaar*, retaining foreign body, debilitated, children, oldaged, people afraid of procedure, having multiple wounds already and unable to perspire are advised to avoid *Agnikarma*.

When surgeon unnecessarily burns the excess tissue or burn done on the healthy/nondiseased area of body it is known as *pramada dagdha*.

On the basis of amount of *dagdha* *acharya* describes four types of *agnidagdha* as

*Plusth dagdha, Durdagdha, Samyag Dagdha and Atidagdha.* When *Agnikarma* is performed for therapeutic purpose then *dagdha* must be *samyagdagdha*. In *plusthdagdha* the skin is partially burnt and the colour of skin is changed. *Acharya Vaghbata* equates this to *Tuthadagdha*. This might be the first degree of burn. *Durdagdha* is the condition where burn occurs deep in the skin. In this condition large vesicles are formed, *Chosh* type of pain, *Daah*(burning sensation), *Raag*(redness), *Paak*(Putrification), and severe pain for long time, this kind of features are present. This may be considered as second degree burn. If the colour of burn tissue is like *Taalaphalavarna* and no deformity appears it is called *Samyagdagdha*(third degree of burn). If the burns occur deep and large part of muscles are burned and blood vessels, nerve and joints dislocates and extensive tissue damage occurs along with generalized features *jvara*(Fever),*daha*(burning sensation),*pipasa* (excessive thirst) and *Murcha*(unconsciousness) appear as complication then that type of *dagdha* is called *Atidagdha* (fourth degree of burn). During performance of *Agnikarma* one should always assess the condition for grading of burn and manage accordingly. After *Agnikarma* patients usually suffer severe pain, burning sensation and appearance of large vesicle because of *Kupita agni* vitiated *Rakta* and because of same composition of *pitta* it also vitiates and produces features described above. *Acharya* described the *chikitsa*<sup>6</sup> of different kinds of burn. In *plustdagdha* the affected area of body should be kept warm by external application of *lepa* and internal usages of *Usnavirya* drugs. This management has a scientific logic as due

to burn the blood in the cutaneous vessel becomes more concentrated due to loss of water<sup>7</sup>. In this condition if cold therapy is given then it may increase the thickness of blood which may coagulate and lose its capacity of carrying oxygen to tissue. That's why *acharya* stated warm treatment for *plustdagdha*. In *durdagdha* both *sheeta* and *usna chikitsa* should be employed. For local application *Ghrita*, *seka* and *Alepa* should be cold. In *Samyagdagdha* the management should be like *pittajvidradhi* along with *Alepa* made by mixing *Vanshlochana*(*Bambusa arundinaceae*), *Plaksha* (*Ficus lacor*), *RaktaChandan*(*Pterocarpus santalinus*), *Gairik* and *Guduchi* (*Tinospora cordifolia*) and *Ghrita*. In case of *Atidagdha* the treatment should be like *PittajVisarpa*. The burned tissue should be excised and for local application *sheetviryra* drugs are used. The powder of *Shalidhanya* or *Kwath* of *Tinduk* bark mixed with *ghrita* applied and the site should be covered with *Guduchi Patra* and *Kamal patras*, (they keep the area moist). Other drugs are employed in form of *kalka* for *ropana karma* in *agnidagdha*.

*Acharyasushruta* indicates *agni karma* in different surgical diseases in different places of *Sushrutsamhita*. In the management of wound under *Sashiupakram* he includes *agni karma*. Here *agnikarma* may work by drying discharges like pus, serous or blood that may improve wound healing. In *vatavyadhichikitsa* *Agnikarma* is indicated in *Snayu*, *Sandhi* and *Asthitvat Prakop*. In *Sutra sthan* *Acharya* describes some disease conditions where *agnikarma* is indicated like *Tvacha*, *Mamsa*, *Sira*, *Snayu*, *Sandhi* and *Asthi* where there is sharp pain due to *vataprakop*, wounds having hypergranulation, hard and

hypoesthesia, and some disease like *Arsh*, *Granthi*, *Arbuda*, *Bhagandar*, *Apachi*, *Slipada*, *Kadar*, *Katishool*, *Vatvyadhi*, *Charmkeel*, *Tikalaka*, *Antravridhi*, and *Dieases of Sandhi* and at the site of bleeding and *Nadivrana*.

#### **PROCEDURE:**

The site must be cleaned with either *triphlakashaya* or any antiseptic solution to provide an antiseptic area. The red hot *shalaka* of *panchdhatu* held in right hand and the area held firmly with left hand and *dagdha* with pointed site in *bindu*, *vilekha*, *pratisaran* or *valaya* type *dagdha* be done according to requirement. The *dagdha* should have feature of *samyak tvacha dagdha*. The *dagdha* site should be kept cold immediately with pulp of *Ghritkumari* and later *haridra* and *tripphala* powder along with *madhu* and *grita* applied at the *dagdha* site. Both drugs may reduce the inflammation and post-operative pain. Patient should always be immunized against tetanus by 1 ampoule injection of tetanus toxoid. The area should be left open and patient should be advised to avoid wetting the area that may provoke post-operative infection. Usually there is no need of any prophylactic antibiotic.

#### **DISCUSSION:**

In current *ayurvedic* practice *agnikarma* has very good results in some chronic conditions like plantar fascitis, sciatic pain, peri-arthritis in shoulder joint, frozen shoulder, removing plantar corn etc. Plantar fasciitis is a chronic degenerative inflammation of the plantar fascia. Here the *bindu* type of *agnikarma* is employed. The mode of action of *Agnikarma* can be explained as follows. *Agnikarma* is mainly indicated in the disease having *Vataprakop*. The *guna* of *agni* are *Sukhma*, *tikshna*, and *usna*. By virtue of these

*gunaagni* entering in the different small channels (*srotas*) of body the *prakupitavata* is neutralized. Other theory is that *usnagunaagni* improves the *dhatvagni* that pacifies the *aam dosh* and reduces the pain. By this means as *vatashaman* occurs the pain subsides spontaneously. Here *agnikarma* works by virtue of its *guna* but in some places it works by mechanical degeneration of tissue. *Acharya Sushrut* indicated *agnikarma* in *Arbuda*, *bhagandar*, *Nadivrana* and *dushtavrana*. Here *agnikarma* works by its mechanical power of destroying the tissue by heat (Unhealthy granulation tissue in chronic non-healing hyper granulated wound, unhealthy granulation tissue in track of chronic sinus (*nadivrana*), fistulous track (*Bhagandar*), and malignant cells in the case of *arbuda*). In diseases with hyperkeratinised tissue like *kadar* and *charmakeel* it is both mechanical power and effects of *guna* which are acting. Here by *bindu* or *vilekha* the hypergranulated tissue is removed by direct burn through *loha tapta shalaka* then due to its *guna* it destroys the deep seated root cells of *kadar*. *Agnikarma* explained by *acharyasushrut* in many diseases can be understood except in *aantravridhi*. It is very difficult to understand and explain how the *agnikarma* works in *aantravridhi*.

#### **PROBABLE MODE OF ACTION:**

The probable mode of action of *agnikarma* may be the property of *agni*. The properties of *agni* are *sukhsma*, *laghu*, *thikhsna* and *usnaguna*. It works on both *vata* and *kapha dosa*. It works on *vata* by its *usna* and *tikhsnaguna* and on the *kaphadosa* by *laghu*, *sukhsma*, *thikhsna* and *usnaguna*. It works deep in the tissue because of its power of penetration to deep tissue by virtue of *laghu*, *sukhsma* and

*tikhsna guna*. Besides working on the *doshaagni* it also destroys the dead tissue on wound surface by its mechanical burn causing thermal injury. In this way it promotes the healing in chronic non healing wounds.

**CONCLUSION:** It is easy to learn and apply the principle of *agnikrama* in the management of different surgical conditions where surgery is not possible to treat the condition or there is great chance of recurrence of disease. *Agnikarma* provides lot of options for the surgeon as it is easy to perform, less chance of recurrence, less bleeding, no need of suture, less post-operative hemorrhage and minimal pain.

#### REFERENCES

1. SushrutSamhita, edited with Ayurveda tatva Sandipika by KavirajaAmbikaduttaShastri, Chaukhamba Sanskrit Sansthan, sutra sthanam chapter 1/9,p3.
2. SushrutSamhita, edited with Ayurveda tatva Sandipika by KavirajaAmbikaduttaShastri, Chaukhamba Sanskrit Sansthan, sutra sthanam chapter 12/3, p38.
3. SushrutSamhita, edited with Ayurveda tatva Sandipika by KavirajaAmbikaduttaShastri, Chaukhamba Sanskrit Sansthan, sutra sthanam chapter 12/11 &16, p39-40.
4. SushrutSamhita, edited with Ayurveda tatva Sandipika by KavirajaAmbikaduttaShastri, Chaukhamba Sanskrit Sansthan, sutra sthanam chapter 12/4, p-38.
5. Charaksamhita, vidyotani hindi commentary by, pandit rajeswar datta shastri, Chaukhamba surbharti academy, Varanasi, chikitsa sthan,chapter ,28/100 p-795.
6. SushrutSamhita, edited with Ayurveda tatva Sandipika by KavirajaAmbikaduttaShastri, Chaukhamba Sanskrit Sansthan, sutra sthanam chapter 12/22, 23, 24, 25 p- 41.
7. Tintinali,Judith E.(2010). Emergency medicine: A comprehensive study guide (Emergency medicine (Tintinali). New york: McGraw-hill companies.pp.1374-1386.

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Declared