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Devendra Prasad Mishra
Devendra Prasad Mishra is presently working as an Associate Professor at Department of halakyaTantra, GurukulKangri Ayurvedic Medical College and Hospital, Haridwar, U.K.

A study on the role of *Agni Karma* (Cauterization) in the management of chronic wounds

Devendra Prasad Mishra

Abstract

Agni Karma is one of the important parasurgical procedures described in Ayurvedic *Samhita*. Sushruta, Charaka and Vaghbata describe the role of *Agni karma* in debilitating disorders. Vaghbata even termed it as the best amongst all kind of therapeutic procedures in Ayurvedic armory because of non-recurrence.

Despite many new tools and techniques dealing with chronic wounds is still a major clinical challenge to the medical fraternity. Sushruta advices sixty procedures for the management of wound healing; *Agni Karma* is one of them. Charaka specially advocated the role of *Agnikarma* in the management of chronic wounds.

Keeping this in mind a careful review of ayurvedic literature was done along with modern electrical cauterization. It was found that *Agni karma* has many advantages over actual cautery and is one of the safest methods to be used for the management of chronic wounds.

Keywords: *Agni Karma, Sushruta Samhita, Cauterization, Wound*

1. Introduction

Aacharya Sushruta has mentioned different methods of management of diseases such as *Bheshaja karma, Yantra karma, Shastrakarma, Ksharakarma* and *Agnikarma*.

Agnikarma has been explained as one among the *Anushastra&Upyantra*. He further mentioned that a disease once treated by *Agnikarma* does not recur and does not get infected easily. Therefore *Agnikarma* has emerged as an integral part of the Ayurvedic therapeutics. *Agnikarma* mean, application of *Agni* or heat directly or indirectly to the affected part with the help of different materials to cure a disease. Even today, the modern science applies the concept of *Agnikarma* into the practice by advocating cauterization during surgery and during sterilization procedure.

1.1. Need of Study

Chronic wounds are one of the major clinical challenges for the health care professionals throughout the world. Although there is much advancement in modern medicine, yet dealing with chronic wounds is a matter of concern for clinician. Sushruta and Charaka advocated *Agnikarma* in the management of *DushtaVrana*(chronic wound). Keeping this in mind a thorough review of ayurvedic literature was done and it was found that judicious use of *Agnikarma* can be very useful for the management of chronic wounds.

2. Literature Review on *Agnikarma*

2.1. *Agnikarma* in Light of *Veda*

In *Rig-veda* application of *Agni* has been mentioned in context to obstetric and gynecological disorders. The verses indicate application of *Agnikarma* in order to get rid of micro-organisms in vagina and uterus of the women to save the fetus from getting infected.

Yajur-veda has symbolized *Agni* and its purpose in *sheeta* (cold) and related disorders. *Samaveda* enumerated *Agni* in a separate chapter as *Agneya-Kanda* where an elaborate description to *Agni* is mentioned. *Atharva-veda* identified and worshipped *Agni* as a God^[1].

Correspondence:

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2.2. Agnikarma in Ayurvedic Samhita

Sushruta indicates *Agnikarma* (cauterization) in different surgical diseases in different places in *Sushruta Samhita*. In *Sutra Sthan* he mentioned *Agnikarma* in the disorders of *Tvacha, Mamsa, Sira, Snayu, Sandhi* and *Asthi* where there is sharp pain due to *Vata* vitiation, wounds having hyper granulation, hard and hypoesthesia, and some other disease like *Arsh, Granthi, Arbud, Bhagandar, Apachi, Slipada, Kadar, Katishool, Vatvyadhi, Charmkeel, Tilakalaka, Antravridhi*, at the site of bleeding and *Nadivrana*. Further in the management of wound under *Sashtiupakrama* he includes *Agnikarma*^[2].

Charaka advocates the use of *Agnikarma*(cauterization) in excessive hemorrhage after excision of a growth, *Kaphaja* nodules, gland, stiffness and disorders due to *Vata*, wounds with hidden pus and lymph, deep and firm, and after amputation of body part. The expert in *Agnikarma* should cauterize the spot with Bee wax, 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 Bee- wax otherwise iron sticks or honey^[3].

Acharya Vaghbata mentioned *Agnikarma* (cauterization) more powerful than *Ksharkarma*, as it can successfully treat the diseases which are not amenable to drugs, surgical treatment and caustic alkalis and gives no room for the diseases to recur. It can be used with diseases like tumors, malignant tumors, hemorrhoids, rectal fistula, scrofula, filariasis, intestinal hernia, bad ulcers, sinus ulcers, deep or concealed ulcers etc.

In condition such as wounds which are swollen, which have cavities, which are cut off and hanging, in cavity of tooth, wounds having worms and bad ulcers, *Agnikarma* should be done by filling them with hot fats (oil, *Ghrita* etc), Bee wax, honey, and *Guda* (jaggery). After satisfactory procedure the area should be smeared with honey, *Ghrita* and paste of drugs which are cold and unctuous^[4].

2.3. Modern Literature

Cauterization has been described in Hippocratic Corpus. The cautery was employed for almost every possible purpose in ancient times; as a counterirritant, as a haemostatic, as a bloodless knife, as a means of destroying tumors, etc. Later, special medical instruments called cauters were used to cauterize arteries. The technique of ligature of the arteries as an alternative to cauterization was later improved and used more effectively by Ambroise Pare. Presently it is used extensively as a part of surgery to achieve absolute haemostasis.

Around the turn of the 19th century, medical uses of electricity began as another form of cauterization. Although chemical cauterization was in practice, but has many drawbacks. Presently lots of works are going to prove usefulness of cauterization in various diseases.Recent work have done in low back, referred leg pain,cutaneous leishmaniasis,skin warts, epistaxis, psychiatric illnessetc. Study states that intradiscal electro thermal heating treatment is a minimally invasive procedure used to treat patients with low back and referred leg pain^[5].

2.4. Materials Used for Agnikarma

Wide ranges of materials were used during *Samhita* period for *Agnikarma*, which are from plant origin, animal origin and metals.

Ex- *Pippali, Jambavoshta, Guda, Godant,Ajashakrida, Shara, Kshaudra, Shalaka, Sneha, Lauha*^[6].

These different materials can be classified as under-

- **Snigdha:***Kshaudra, Ghrita, Taila* (on *Sira, Sanayu, Asthi* and *Sandhi*).
- **Rooksha:***Godanta,Shara,Shalaka, Ajashakrida, Pippali* (on *Twaka* and *Mamsa*).
- **Plant origin:***Pippali (Piper longum), Yashtimadhu (Glycerrhizaglabra), Haridra (Curcumalonga), Guda (Jaggery), Sneha (Oil), Bee-wax.*
- **Animal origin:***Godanta(Cow's Tooth), Ajashakrida(Goat's pellet like stool),Ghrita(Cooked butter),*
- **Metallic origin:***Shara and Shalaka made up of Suvarn (Gold), Tamra (Copper), Rajat (Silver), Loha (Iron) and Panchdhatu(amalgam of five metals),Suryakanta(a kind of crystal).*

2.5. Types of Agnikarma in Ayurveda Samhita:

2.5.1. On the basis of Aakriti (shape):

- *Valaya* (round)
- *Bindu* (dot-like)
- *Vilekha* (linear pattern) - (*Tiryak* (oblique), *Riju* (straight), *Vakra*(zigzag))
- *Pratisarana* (rubbing at the site)
- *Ardhachandra* - Crescent shape.
- *Swastika*- Specific shape of *Swastika Yantra*.
- *Ashtapada*-Specific shape containing eight limbs

2.5.2. On the basis of Dhatus (tissue) burned during procedure:

- *Twakdagdha*(skin)
- *Mamsa dagdha*(muscle)
- *Sira snayudagdha*(vessels & ligaments)
- *Sandhi asthidagdha*(joints& bone)

Based on the amount of burn, again *Agnikarma* is classified as *Plushtdagdha, Durdagdha, SamyakDagdha* and *Atidagdha*. When *Agnikarma* is performed for therapeutic purpose then *dagdha* must be *Samyakdagdha*.

In *Plushtdagdha* 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 with severe pain, burning sensation, redness and putrefaction may follow. This may be considered as second degree burn.If the colour of burn tissue is like *Taalphalavarna* (palm fruit) and no deformity appears it is called *Samyakdagdha*, this may be co-related with third degree 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 like fever, burning sensation, excessive thirst, unconsciousness appear, then it is *Atidagdha*,whichcanbeco-relatedwithfourthdegreeburn^[7].

During performance of *Agnikarma* one should always assess the condition for grading of burn and manage accordingly. Sushruta especially emphasis on the use of *Ghrita* for post *Agnikarma* procedure for early relieve from symptoms. Some of common preparations recommended by Sushruta are-

1. Honey+ *Ghrita*.

2.*Ghrita+Tugakshiri+Plaksa+Chandana+RedOchre+Guduchi*.

3. Ghrita+Bee
wax+Madhuka+Rodhra+Sarjarasa+Manjistha+Chandana+
Murva.

3. Discussion

Agnikarma is not just cauterization but a complete scientifically observed procedure where different materials are being used for performing *Agnikarma* on different tissue and disorders. Another point of interest is use of *Ghrita* as a base for all kind of healing paste applied post *Agnikarma* procedure. Here are some of the facts which prove the role of *Agnikarma* in the management of chronic wounds.

- It is now proved that chronic wounds have minute thrombi in the capillaries^[8], which is one of the major factor for delayed healing, here *Agni karma* can be very useful, as we use different material for *Agnikarma*, therefore it may be possible that some of these materials like Bee wax is helpful in dissolving the minute thrombi, thus increases local circulation and helpful in healing.
- Bio burden in chronic wound is mainly because of necrotic tissue present in it, which delays healing process; *Agnikarma* is very helpful to remove the extra slough material present in the chronic wound and also if there are any kind of swelling present in the wound which are hard to remove by excision.
- Another benefit of using *Agnikarma* is that, as heat itself is a sterilizing agent, so it will also helpful in minimizing microorganisms load in the wound.
- *Ghrita* and honey provides a moist environment, which is very helpful for healthy granulation, honey has debriding and antibiotic properties^[9].
- Bee wax is also very useful during repairing phase of healing^[10].
- Pain is one of the troubling symptoms in chronic wounds, *Agnikarma* (heat)may stimulate lateral spino thalamic tract, which leads stimulation of descending pain inhibitory fibers which release of endogenous opioid peptide which bind with opioid receptors at substantia gelatinosa rolandi which inhibit of release of P-substance(Pre-synaptic inhibition) which blocks the transmission of pain^[11].
- General herbs which are used for paste application like *Madhuka(Glycrrhiza glabra)*, *Sarjarasa(Shorea robusta)*, *Lodhra(Simplocos racemosa)*, have healing property while *Chandana(Santalum album)* has cooling and antibacterial properties^[12].

4. Conclusion

Agnikarma has been given special place in surgery by Sushruta and it is believed that disease treated by *Agnikarma* never reoccurs. In modern time also it is used as therapeutic burns or cauterization.

A judicious use of *Agnikarma* can be very useful in the management of chronic wounds as it has many benefits over the conventional technique of cauterization. What we really need today is more clinical research work on different aspects of *Agnikarma* procedure & also there is scope for further development of separate ayurvedic burn care unit.

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