



## Review Article

### Importance of Parasurgical Procedure in Ayurveda

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#### ABSTRACT

*Sushruta*, father of surgery described para surgical procedure as *anushastra karma*. Para surgical procedures are procedures performed by non-surgical instruments hence called para surgical procedures. *Sushruta* has explained different para surgical procedures (*anushastra karma*) like *ksharakarma*, *agnikarma*, *siravedha karma* and *jalaukavcharan*. These para surgical procedures are very helpful to avoid surgical procedures and with the help of these procedures, we can avoid surgical as well as anesthetic complication. These procedures are very useful in scared patients or patients with co-morbid condition in which it is difficult to perform surgery, due to this usefulness in various surgical condition like hemorrhoids, thrombosed external hemorrhoid, fissure in ano, fistula in ano, pilonidal sinus, calcaneal spur, warts, *arbuda* (tumors), cellulitis etc. Para surgical procedures are useful to treat these diseases with less chances of recurrence. Hence, para surgical procedures have great importance in Ayurveda.

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#### Introduction

*Sushrut*, “father of surgery” described para-surgical procedures as *anushastra karma* in *Ayurveda* literatures apart from many surgical procedures. These procedures are separate from major *ashtavidha shastra karma*. *Anushastra karma* includes *kshara karma*, *agnikarma*, *jalaukawcharana*, *siravedha karma* etc *anushastra karma* is carried out in those

conditions. Where *shastra karma* or surgery cannot be done and in some special conditions like children, sensitive scared patients. *Sushruta* described concept of *anushastra karma* as important modality of *shalya tantra* which involves para-surgical procedures with non surgical instruments. *Acharya Sushruta* explained fifteen types of *anushastra* used in *shalya twakasara* (bamboo bark), *sphatika*,

*kancha* (glass), *kuruvind*, *jalauka* (leech), *agni* (flame), *kshara* (alkali), *nakha* (nails), *goji*, *shephalika* (harashringar leave), *shaka-patra*, *kareera*, *bala* (hair) and *anguli* (finger) (Sushruta, 2002; Sutra sthana-7:15). These are indicated in children sensitive/fearful persons and in the absence of surgical instruments (Sushruta, 2002; Sutra sthana-7:16-17). *Kshara karma*, *agnikarma* and *jalaucawacharana* are most important *anushastra karma* included in *shashti upakrama* which involves utilization of *kshara*, *agni* and *jalauka* for various therapeutic purposes. *Agni karma* helps in *vata* and *kapha* predominant diseases. *Kshara* obtained from ash of different plants mainly used in *arsha* (piles) and *bhagandara* (fistula in ano). *Jalaucawacharana* mainly used for bloodletting or purification purposes. *Kshara* is a medicine obtained from ash of different plants. *Kshara* is mainly of two types- *paaneeya kshara* (ingestible) and *pratisarniya kshara* (local applicable) (Sushruta, 2002; Sutra sthana- 11:6). *Kshara* is best among *shastra* and *anushastra*. *Pratisarniya kshara* is mainly used as chemical cauterization and in wound management, various anorectal disorders such as *arsha* (haemorrhoids), *guda bhramsha* (rectal prolapse). Along with *pratisarniya kshara*, *kshara sutra* and *kshara varti* these two are being practiced in a wide variety of diseases like *bhagandara*, *nadivrana*, *dushta vrana*. *Agnikarma* is second widely used parasurgical procedure it is indicated as a therapy of choice in many diseases, it indicated in *vata* and *kapha* related diseases. Moreover, the scope of this therapy is further extended to diseases that are found to be hard to treat by *sheeta-ushana snigdha-rooksha* kind of treatment. The final attribute of *agnikarma* can be considered on its tremendous prophylactic potential to prevent certain diseases and also has developed as a precursor to 'cauterization' of modern era. *Jalaucawacharan* is third para surgical procedure explained by sushruta which is widely used in ayurveda in *dushta vrana* (non healing wound) surgical condition like thrombosed haemorrhoid, non healing chronic wound in which debridement is indicated. Considering usefulness of these procedures present article summarizes

importance of para surgical procedures in Ayurveda.

Aim of the present work is, 'to study the importance of para surgical procedures (*anushastra karma*) in Ayurveda through literary and practical approach'.

### Material and Methods

This article is literary review regarding importance of Para surgical procedure (*Anushastra karma*) depending on procedure of *Kshara karma*, *Agnikarma* and *Jalaucavcharana* as described by *Acharya Sushruta* in *Sushruta samhita*. There are 15 types of *Anushastra* as described by *Sushruta*. Among them important and practically used in present time is as follows; 1) *Kshara karma*, 2) *Agnikarma*, 3) *Jalaucavcharana*

### Kshara Karma

*Kshara* is a medicine obtained from ash of different medicinal plants. *Kshara* is mainly of two types- *Paaneeya kshara* and *Pratisarneeya kshara*. *Kshara* is best among *shastra* and *anushastras*. *Pratisarniya kshara* is mainly used in wound management, various anorectal disorders such as *Arsha* (Haemorrhoids), *Guda bhramsha* (Rectal Prolapse). In wound management it is mainly used for *Shodhana* (debridement). *Ushna* and *Tikshna* properties of *Kshara* are helpful in wound debridement. *Sushruta* clearly mentioned those *Vrana Lakshana- Utsanna Mansan* (elevated margin and hyper granulation tissue), *Kathinana* (hard consistency), *Kandu Yukta* (severe itching), *Chirothitan* (chronic wounds) and unhealthy wounds can be cleaned easily i.e. help in wound bed preparation, which is the principal management in chronic wound (Sushruta, 2002; Chikitsa sthana-1:88). *Pratisarniya Kshara* also help in *Darana Karma* in the large pus pockets having no opening especially in those where one cannot perform surgical intervention, like wounds in children, elder patient, weak patient, panic patients, ladies and wounds over sensitive and vital portion. *Kshara* is also useful in second to third degree haemorrhoid and it can avoid surgery. *Kshara Sutra* and *Kshara Varti* are other two variants of *Kshara Karma* which are used in

the management of *Nadi* (Sinus) and *Bhagandara* (fistulas). These diseases are difficult to treat otherwise. This is because of its undermined edge and unexposed infective site and difficult in wound debridement. These conditions are treated by both methods- *Shastra Karma* and *Anushastra* (*Kshara sutra* & *Kshara varti*). *Sushruta* mentioned that *Nadi* (sinus) present in emaciated, weak, anxious patient and present over vital parts should be treated by *Kshara Sutra*, not by *Chhedana* (surgery) (*Sushruta*, 2002; *Chikitsa sthana-17:29*). *Bhagandara* is also treated by *Kshara sutra* in same manner. *Kshara Varti* is another cleansing agent which treats *Nadi* effectively described in all Ayurvedic texts. *Kshara* is also used on that places where *Shastra* cannot be effective and appropriate (*Sushruta*, 2002; *Sutra sthana- 11:3*).

#### **Procedure of Kshara Karma (Pratisarniya Kshara) Purva Karma (Pre-Operative Care)**

A patient who is considered fit for procedure is prepared accordingly. Patients are counseled and given explanation about the procedure in order to make them aware about the process of treatment. *Agropaharaniya* - Before starting the procedure material required such as *Pratisarniya Kshara*, *Nimbu Swarasa*, spatula, cotton, bowl, proctoscope, *Changeri Ghrita/Jatyadi Ghrita* or *Taila* are kept ready.

*Pradhana karma* (Operative Procedure)- Patient is taken on the operation table in lithotomy position. After cleaning, local anaesthesia is given and manual dilatation is done. *Pratisarniya Kshara* is taken in a bowl and applied over the pile mass or any other selected area. It is kept until the colour changes to *Pakwajambu phalavarna* (*Sushruta*, 2002; *Chikitsa sthana-5:4*).

*Pashchata karma* (Post-operative Care)- Applied *Kshara* is wiped with distilled water followed by *Nimbu Swarasa*. The procedure can be repeated for 2, 3 times according to indication and severity of disease. If required the procedure can be repeated for 2nd or 3rd sittings at interval of 21 days.

#### **Agni Karma**

*Agni karma* is second important *Anushastra Karma* which is described by all *Acharya*. There

are so many tools for *Agnikarma* called *Dahanupkarana* like *Pippali*, *Ajashakrit*, *Godanta*, *Shalaka* (probes) *Ghrita*, *Tail* and *Guda* (*Sushruta*, 2002; *Sutra sthana-12:4*) According to *Akriti* (*Sushruta*, 2002; *Sutra sthana-12:11*) *Agnikarma* may be of following types;

*Valaya* - Circular shape., *Bindu* - Dot like shape. According to *Acharya Dahana shalaka* should be of pointed tip. *Vilekha* - Making of different shapes by heated shalaka. *Vilekha* type of *agnikarma* is further subdivided by *Acharya Dalhana* into three types according to the direction of line- *Tiryaka* (Oblique), *Riju* (Straight), *Vakra* (Zig-zag )

*Pratisarana* - Rubbing at indicated site by heated shalaka and there is no specific shape. According to *Ashtang Hridya* there are 3 more types of *Agnikarma* based on *Akriti* *Ardhachandra*-Crescent shape, *Swastika*- Specific shape of *Swastika Yantra*, *Ashtapada* - Specific shape containing eight limbs in different directions.

Different types of *agnikarma* performed according to body parts—*Twak Dagdha*, *Mamsa Dagdha*, *Sira Snayu Dagdha* and *Asthi Sandhi Dagdha*. *Dahana Upkarana* are used according to site. So *Agnikarma* can be classified as (*Sushruta*, 2002; *Sutra sthana-12:8*);

*Twakgata Vyadhi*: Diseases involving skin; *Pippali*, *Ajashakrita*, *Godanta*, *Shara*, *Shalaaka* are used.

*Mamsagata Vyadhi*: For diseases involving muscles, *Jambavaushtha*, *Panchadhaatu Shalaaka Kshaudra* are used.

*Sira Snayu Asthisandhi*: For diseases of *Sira*, *Snaayu*, *Sandhi*, *Marma* diseases *Kshaudra Madhu* (honey), *Guda* (Jaggery) and *Sneha* are used.

#### **Procedure of Agnikarma**

*Poorva Karma*- A patient who is considered fit for procedure is prepared accordingly. Patients are counselled and given explanation about the procedure in order to make them aware about the process of treatment., *Agropaharaniya* - Before starting the procedure Gas stove, *Shalaka*, *Madhuyashti churna*, and *Ghritkumari* (Aloe vera) are kept ready. The area is cleaned and marked.

*Pradhana Karma- Panchdhatu shalaka* or any other *Dahanopkarana* for a particular disease is selected. *Panchdahatu shalaka*, the *Shalaka* is heated red hot on the gas burner and applied over the selected area. The process is repeated according to indication and need. Corn is *Mamsagata Vikara* so *Panchadhatu Shalaka* is used, frozen shoulder is *Snayusandhigata vikara*, thus *Guda*, *Sneha* or *Madhu* is selected as *Upkarana* for *Agnikarma*. Immediately after completion of procedure pulp of *Ghrithumari Majja* is applied in the area followed by *Madhuyashti Churna*. During the procedure, patient is carefully observed for any untoward complications. Patients are advised to keep the area dry, clean, avoid exertion, trauma and *Guru Apathya* (Unhealthy) diet. Same procedure can be repeated according to the disease and severity of disease.

***Jalaukawacharana*** (Leech therapy) (Sharma RK., et al., 2017)

*Jalaukawacharana* is third important *Anushastra karma* explained by ancient *Acharya*. *Jalaukawacharana* is a method of *Raktamokshana*. *Raktamokshana* has been described in *Sushruta samhita* and *Ashtang hridaya*. It has two methods *Shastrakrita* and *Ashastrakrita*. *Shastrakrita* further have two methods- *Siravedha* and *Pracchana*. *Ashastrakrita* method can be achieved with following tools- *Shringa*, *Jalauka*, *Alabu* and *Ghati*. There are mainly two types of *Jalauka*- *Savish* (Poisonous) and *Nirvisha* (Non-poisonous) having six *Jalauka* in each type. *Nirvisha Jalauka* is of therapeutic use. They are indicated in various diseases e.g. *Twak roga*, *Raktaja roga*, *Dushta Vrana* (Sushruta, 2002; Sutra sthana-13:12). In wound management *Jalauka* is generally applied in initial phase of wound progress. *Raktamokshana* reduces the pain and suppress the suppuration of premature swelling. Wounds with inflammation, hardness, reddish black in color, tenderness and uneven surface are treated by *Raktamokshana*.

**Application of *Jalauka* (*Jalaukawacharana*)** (Sushruta, 2002; Sutra sthana-13:19-22)

*Purvakarma* (Pre-operative Care)

a. Purification of *Jalauka- Jalauka* are kept in *Haridra Jala*, containing *Haridra Churna* (Turmeric powder) in a kidney tray half filled with fresh water.

b. Preparation of Patient- Before application of *Jalauka*, patient's proper counseling should be done for better outcome of *Jalaukawacharana*. Preferably patient should be in lying down position. The part where *Jalauka* is to be applied is cleaned with normal water if we use Antiseptic solution to clean leech will not stick to the desired part and will not suck the blood.

*Pradhana Karma* (Operative Care)

Firstly, part of the body is selected where *Jalauka* is to be applied according to indication. Selected site is cleaned carefully. *Nirvisha Jalauka* is kept over the selected part. *Jalauka* sticks to that part. If a *Jalauka* does not stick, then puncture the site with sterile needle and *Jalauka* is applied. *Jalauka* sucks the blood by its anterior sucker which is attached to the base by posterior sucker. During sucking of blood *Jalauka* should be covered with cold and wet cotton swab to protect the leech from excessive heat of blood. Number of application of leeches depends on severity and general condition of the disease.

*Pashchata karma* (Post-operative Care)

a. *Jalauka* Care- *Jalauka* should be removed from the site by sprinkling *Haridra Churna* or *Saindhava* or otherwise *Jalauka* leaves the site on its own when completely sucked. Vomiting is induced to *Jalauka* so that sucked blood is removed by *Haridra Churna* on its mouth and by slowly and gently squeezing from tail to mouth & then kept in fresh water. Again same *Jalauka* can be used after one week interval. The *Jalauka* should move freely in water otherwise it is diseased *Jalauka*, called *Durvanta* by *Sushruta*.

b. Patient Care- Dressing of the affected part should be done by *Triphala Kashaya* and application of *Haridra Churna* and *Madhu* as these are haemostatic, antiseptic and analgesic in nature. After cessation of bleeding, tight pressure bandaging should be done to avoid chances of re-bleeding. Patient is instructed to be aware of oozing of blood from the site about 1-8 hrs. Contraindication of *Jalaukawacharana*: It is contraindicated in treatment of hemorrhagic diseases like haemophilia, severe anaemia,

coagulopathies, hypotension, active tuberculosis, high grade fever, immuno-compromised patients.

### Discussion

In *Shalya tantra*; *Shastra Karma* is the principle procedure mainly followed, but along with *shastra karma* different *Anushastra Karma* is equally important and effective in surgical disease management. As *Acharya* have explained different *Anushastra* with *Shastra Karma*; there are some places or diseases where we cannot perform *Ashtvidha shastra karma* or it is difficult to perform surgery, so we have to use alternative tools in those cases. Here lies the importance of *Anushastra Karma*. In present era three main *Anushastra karma* are there *Kshara Karma*, *Agnikarma* and *Jalauka karma* are gaining popularity because of their usefulness. *Kshara Karma* is very much effective in the treatment of *Arsha* (Haemorrhoids), *Gudabhrams*a (Rectal Prolapse) and *Kshara sutra* is applied to sinuses and fistulas. When *Kshara* is applied it should be kept until 100 *Matra kala* as described by *Sushruta* and *Samyaka Dagdh Lakshana* appear as *Pakwajambuphala Varna*. After that it should be washed with *Nimbu Swarasa* to prevent extra caustic effect of *Kshara*. The probable mode of action of *Pratisarneeya Kshara* is, as it creates a chemical burn on prolapsed rectal mucosal folds which causes cicatrization (in wound healing process) and may strengthen the anorectal ring in rectal prolapse. Its importance lies in its action and effectiveness, because of its ability to cure those diseases which can't be cured by the *Bheshaja, Shastra. Agnikarma* works on all the *Vataja* and *Kaphaj* disorders as *Ushna Guna* of *Agnikarma* is opposite to *Sheeta Guna* of *Vata* and *Kapha Dosha* with less recurrence. *Jalauka* are more effective in the management of *Dushta Vrana* and Thrombosed haemorrhoid. Leech saliva contains following chemical substances such as *Bdellins* (Trypsin plasmin inhibitor), *Hyaluronidase*, *Hirudin*, *Carboxypeptidase- A* inhibitors, and many others which act on the affected part (Anonymous, 2019). *Bdellins* is found to have anti-inflammatory action at the wound site. *Hyaluronidase* has antibiotic property. *Carboxypeptidase-A* inhibitors increase the blood flow at the wound site. Histamine and

Acetylcholine like substances present in saliva of *Jalauka* are found to act as vasodilatation on the microvasculature over the site of application. All these properties like anti-inflammatory, antibiotic, vasodilatation increase blood flow and are very much helpful to healing of a wound. Increased blood flow in terms increase oxygen supply an eventually remove toxic materials from affected part.

### Conclusion

In Ayurveda, *Anushastra Karma* (Para surgical procedure) is equally important in surgical practice to *Shastrakarma. Kshara* are widely described in wound management at different places of Ayurvedic texts. *Pratisarniya Kshara* is used in debridement of chronic non healing wounds. *Kshara karma* is a conducive, day care procedure and is very cost effective, which can be performed under local anaesthesia with minimal and trivial post-procedure complications which are very less. *Agnikarma* therapy is result oriented for *Sthanika* (Local) involvement of *Vata* in *Vatakaphaja* disorders. It is an ambulatory treatment modality and affordable to the common man. *Agnikarma* employ on those wounds which are hard and discharging in nature. *Agnikarma* can also be used in corn, calcaneal spur etc. *Jalaukavacharana* has shown to be very effective in the management of various skin disorders, chronic non healing ulcers, Thrombosed haemorrhoid etc with a very cost effectiveness.

### Conflicts of Interests

Authors do not have any conflicts of interest with the publication of the manuscript.

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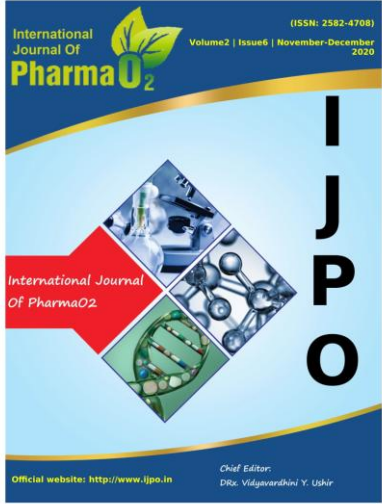
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