

**Title: “Shastrabhyasa –A Research avenues in surgical aspects of Ayurveda”****Authors: Sowjanya. J.**

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Author Correspondence: sowjukool93@gmail.com**Abstract:**

“Many of the surgical procedures explained in texts are primitive, raw and are having practical difficulty. Thus we need to update rediscovered aspects and find few new things in surgery in Ayurveda.” *Sushruta Samhitha* gives detail knowledge about surgical aspects in Ayurveda, where *Agropaharaneeya adhyaya* of *Sushruta Samhitha Sutra Sthana* is considered as gist for the surgical procedures. Surgical aspects of Ayurveda emphasizes on *Trividha* karma which includes pre and post operative measures along with main surgical procedures. Concept of Anesthesia, Antiseptics and Antibiotics, Disinfectants, Sterilization of operation theater, *Ashtavidhashastrakarma*, different kinds of suturing materials are explained in an effective manner. It also emphasizes on *Ksharakarma*, *Agnikarma*, *Raktamokshana*, *Raktaskandanopayas*, concept and management of *Vrana*, different kinds of instruments, *Sandhana*, *Bandhana*, *Asthi Sandhibhagna* and its management and various other surgical aspects, regarding which many research's based on literature, clinical and experimentation have been conducted and proved effective. For an instance, in case of *Arshas* and *Bhagandara*, *Ksharakarma* has been proved to give better results rather than mere surgery. In case of wound, research's shows tremendous effects by Ayurvedic management. The types of Suture materials as absorbable/non absorbable and synthetic/natural which were been described are taken as base in contemporary science. Even though there are ample of research avenues in surgical aspect of *Ayurveda* few aspects which are challenging and where we are lagging are Pre and Post Operative procedures. Hence a literary work with experimentation and its clinical implementation is highly necessary.

Keyword: *Ayurvedic surgery, Sushruta, Trividhakarma, Ashtavidhashastrakarma***Introduction:**

Sushruta Samhitha by *Acharya Sushruta*, mainly emphasis on various surgical aspects, but they are in hidden form. Many of the procedures are raw and difficult to understand or having practical difficulty. The entire text is without diagram or illustrations. Updating many rediscover surgical aspects and finding few

new things in surgery in *Ayurveda* by means of literary research, clinical studies and experimentations not only standardizes the surgical procedures in Ayurveda but make Ayurveda, an eternal science globally equivalent. Even though there are ample of research avenues regarding various surgical aspects, few are still mysterious. Decoding the hidden principles in most challenging surgical

aspects of *Ayurveda* such as, *Trividha karma* is considered at prime importance.

Aims_and_Objects:

1. To evaluate and discuss the research avenues in surgical aspects of *Ayurveda*.
2. To decode the hidden surgical procedures by means of literary research by inculcating it in experimentations and clinical trials.

Materials and methods

All the available literatures, including *Ayurvedic* classics and contemporary science, including the materials available in online media, will be reviewed and documented for the intended study.

Observations:

The fact elucidates that *Trividha karma* that is Pre operative procedures - concept of Anesthesia, Sterilization of Operation theater or Disinfectants and other procedures, main procedures- *Ashtavidhashastrakarma*, Post operative procedures – Antimicrobial activity and other measures are most neglected part in research avenues in surgical aspects of *Ayurveda*. These will be highlighted based on concepts explained in *Sushruta Samhitha*.

TRIVIDHA KARMA

Pre Operative Procedures

Pre Operative Procedures are designed to improve the outcome of surgery, decrease the risk for complications and make the surgery as safe and effective as possible. It Includes Sterilization of Operation theater or Disinfectants, Instruments and materials used, Preparation of Patient, Anesthesia, maintenance of Vitals.


Research avenues regarding the aspects mentioned are as follows: - It has been stated that the place where major surgery is going to be carried out should be well built, clean, devoid of dust and air with proper light¹. Surgeon should be taken care that all the necessary Instruments (*Yantra, Shastra*) and all other materials such as Water, Ghee, Honey, Oil, Milk, Bandages, Suturing materials should be kept ready before the Major Surgical Procedure². Sterilization of Operation Theater, instruments and other materials such as beddings, clothes by means of *Dhoopanakarma* (proper fumigation therapies) with *Guggulu, Haridra, Sarjarasa, Devadaru*, which acts as *Rakshoghna* (Antimicrobial) has been advised. Preparation of patient includes advising patient either to have less food or no food³ before the major surgery, preparation of part by cleaning the area and removing hairs, wearing clean and sterilized clothes and Psychological assurance by means of *Mantra patana*³ which in turn maintains the vitals. Anesthesia by *Madakari dravyas* such as *Teekshna Madya*⁴ and application of *Gunja Kalka* for Local Anesthesia⁵ has been explained.

Operative procedures

Operative procedures are carried out for the correction of deformities and defects, repair of injuries, and diagnosis and cure of certain diseases. *Ayurvedic* Operative Procedures includes *Ashtavidhashastrakarma*. *Acharya Sushruta* quotes that, this Operative Procedures should be performed on *Prashastha Tithi, Nakshatra, Dina*, after performing prayers to god and the patient

should be devoid of anger, grief and other emotions which affects the state of mind.

The major eight procedures are *Chedana* (Excision), *Bhedana* (Incision), *Lekhana* (Scraping or Scarification), *Vyadhana* (Puncturing), *Eshana* (Probing, exploration), *Aharana* (Extraction), *Visravana* (Draining), and *Seevana* (Suturing). *Sushrutacharya* explains instruments, a set of diseases and particular stage of diseases for all major procedures. Each of the following will be explained in brief as follows⁶:

1. *Chedana*: The root word of *Chedana* refers to cut and separate (to excise)⁷. Hence all the surgeries which require Excisions can be included under it. Instruments include *Mandalagra*, *Karapatra*, *Vruddhipatra*, *Nakhashastra*, *Mudrika* and *Utpalapatra*⁸. The diseases are *Arshas*, *Bhagandara*, *Granthi*, *Charmakeelaka* and *Shlaishmika*  *Tilakalaka*⁷. The stage of diseases with less suppuration or which had not underwent suppuration, hard in texture, non movable, which has attained gangrenous state, *Chedana* has to be adopted⁹.

2. *Bhedana*: The root word refers to cut/incise⁷. Instruments include *Vruddhipatra*, *Nakhashastra*, *Mudrika* and *Utpalapatra*⁸. The diseases are *Vidradhi*, all types of *Granthi*⁷. The stage of diseases which has attained stage of Suppuration, which is elevated, movable and Wound without any opening⁹, *Bhedana* has to be adopted.

3. *Lekhana*: The root word gives meaning of scraping or Scarifying⁷. Instruments include *Mandalagra* and *Karapatra*⁸. The diseases are 4 types of *Roohini*, *Kilasa* and

*Upajihvika*⁷. The stage of diseases with hard texture, broad and circular in nature, elevated⁹, *Lekhana* has to be adopted.

4. *Vyadhana*: The root word emphasizes that, with the help of sharp Instruments to Puncture⁷. Instruments include *Kutharika*, *Vrihimukha*, *Ara*, *Vetasapatra* and *soochi*⁸. The diseases are, diseases indicated for *Siravyadhana*, *Mootravruddhi* and *Dakodara*⁷. Particular stage of disease is not mentioned but it has been stated that in case of all the diseases indicated for *Vyadhana karma*, the depth mentioned in each disease is to be considered⁹.

5. *Eshana*: The root word gives the meaning that by *Shalaka* determining the *Naadivranaadi*, means probing or exploration⁷. Instrument includes *Eshani*⁸. The diseases are *Naadivrana*, *Sashalyavrana*, and *UnmargiVrana*⁷. The particular stage of diseases has not been mentioned⁹.

6. *Aharana*: The root word refers to pull out forcefully or to extract⁷. Instruments include *Badisha* and *Dantashankhu*⁸. The diseases are *Sharkara*, *DantaKarnaMala*, *Ashmari* and *Moodhagarbha*⁷. The stage of diseases where *Shalya* (any foreign substance) is present inside the body either with open wound or closed one, till it attains *Nishalyalakshanas* such as reduction of pain, swelling, can able to perform movements, *Aharanakarma* has to be performed⁹.

7. *Visravana*: The root word emphasizes that drainage of *Rakta*, *Lasika* and *Pooya* outside⁷. Instruments include *Soochi*, *Kushapatra*, *Aatimukha*, *Sharaarimukha*, *Antarmukha*, *Trikoorchaka*⁸. The diseases are *Pancha Vidradhi*⁷. The stage of diseases with swelling, hard texture,

reddish to blackish discoloration, broad base and painful⁹.

8. *Seevana*: The root word refers to suture⁷. Instrument includes *Soochi*⁸. The diseases are *Medasammuttascha bhinna Gada*, *SulikhitaGada*, *Sadhyovrana* and *Chalasandhivypashrita gada*⁷. The stage of diseases which are devoid of complications caused by suppuration, in case of wound involving Muscle tissue and open wounds⁹ *Seevanakarma* to be adopted.

The eight main surgical procedures have to be thoroughly practiced as explained in *Yogyasootriyaadhyaya of Sushruta Samhitha SootraSthana* by means of various experimentations on flowers, fruits, vegetables, clothes and parts of dead animals which make a Surgeon confident and skillful.

Post Operative Procedures

Post Operative Procedures emphasis on the care patient receives after a Surgical Procedure. It begins immediately after Surgery. It lasts for the duration of patient's hospital stay and may continue after discharge to avoid any complications. It can be categorized under two main streams as Immediate Care and Late Care. Immediate Care includes Assurance to the patient, maintenance of Vitals, Antiseptics, Appropriate Bandaging, shifting patient from Operation Theater. Late Care includes Antimicrobials, Analgesics, Do's and don'ts, and follow up care.

Research avenues regarding the aspects mentioned are as follows:-

Immediate care: *Acharya Sushruta* explains sprinkling of cold water on patient for making patient comfortable and

Assurance to be given by Surgeon to the patient which makes the patient psychologically strong, soon after surgery⁶. *Mantrapatana* for maintenance of the Vitals. Cleansing wound by *Sadhyovranahita* or *Shodhana Kashaya* which acts as Antiseptics. After cleansing the Wound thoroughly different Bandages are to be tied for different Surgical Procedures as mentioned and to be removed after particular time. Patient to be shifted to a room which is devoid of direct wind, dust and *Rakshasa's*.

Late care: *Rakshakarma* has been explained to get rid of fear from *Rakshasa's*; here *Rakshasa's* can be considered as microorganisms. Fumigation therapies have been advised with *Guggulu*, *Agaru*, *Vacha*, and *Sarjarasa*. Necessary medications have been indicated after each and every surgical procedure based on the condition of the patient. For an instance, Pain management after surgery is done by *Vedanasthapana Aushadhi's* (Analgesics).

Do's and don'ts: Should be in a room where *Rakshakarma* has been done, should consume food in order of lighter to the heavier gradually (*Peyadikrama*) should listen to the stories from loved ones. Should not do any vigorous exercises, should not sleep during day hours, should not do night outs, should not sit, stand or sleep for long duration, should not roam around, should not speak excessively, should not indulge in intercourse and should not consume food such as newly cultivated cereals, pulses, salt, sour and pungent taste food substances, alkaline food beverages, alcoholic preparations¹⁰. Follow up medications and wound caring has also been advised for each Surgical Procedures.



Discussions and Conclusion:

An attempt is made to decode the hidden surgical procedures mainly aiming at Pre operative, Operative and Post Operative Procedures.

In Pre Operative Procedures explained, importance of Ghee, Honey, Oil and Milk should be assessed. Sterilization by means of fumigation therapies by assessing the antimicrobial activity. *Mantra Patana* for maintenance of vitals and electrolytes during Surgery. Extraction of chemical constituents of various alcoholic preparations and using it as injectables for Spinal or General Anesthesia. Analyses of chemical constituents of various medicines such as *Gunja* and its action as Local Anesthesia have to be scientifically experimented and should be clinically implemented.

In case of Operative Procedures, scientific approach has to be made in the research avenue for *Ashtavidhashastrakarma*. To decode the principles of utilization of specific instruments in particular procedure, to understand the individual procedure and combined effect of procedures in permutations and combinations in various diseases mentioned, by means of clinical trials in present scenario.

For Post Operative procedures, a scientific approach has to be made in concepts such as Sprinkling of cold water immediately after surgery, *Mantrapatana* for maintenance of Vitals, Antiseptic action of *Kashaya* used for cleansing wounds, significance of materials used for preparation of Bandages and specific type of Bandages used in various conditions, removal of Bandage at a particular time

which in turns helps in proper union of tissues, concept of *Rakshakarma*, Utilization of *Vedanasthapana dravyas* (Analgesics) either orally or by extracting the chemical constituents and making it as injectables, particular do's and don'ts, by experimentations and clinical approach.

Thus, research avenues in surgical aspects of *Ayurveda* play a vital role in bringing up *Ayurveda* in global standards. The Literary research on *Trividha Karma* should be adopted in practice by various experimentations and clinical trials which emphasize *Ayurvedic* Surgery and makes it Independent.

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