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Review Article

TRIVIDHI KARMA IN SURGERY (SHALY TANTRA)

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ABSTRACT

Detailed description about surgical procedure was given by *Acharya Sushrut*. *Purva Karma, Pradhan Karma, and Paschat Karma* are *Trividhi Karma*. *Shashtra Chikitsa* is one of the prime equipment in which *Trividh Karma* i.e. *Purva Karma* (Pre-operative), *Pradhan Karama* (Operative, main action) and *Paschat Karma* play a crucial role in order to get fruitful result after surgery. According to *Sushrut*, *Purva Karma* means preparation of the patient along with collecting all the materials during *Pradhan Karma*. *Asthvidhishastra Karma* is included in *Pradhan Karma*. *Paschat Karma* includes all post-operative care. *Paschat Karma* includes care after surgery i.e., post-operative care of the patient. Every surgery is done under these *Trividh Karma* so that there will be better outcome after surgery. *Acharya Sushrut* well known as father of surgery in Ayurveda selected these three *Karma* wholly and solely for the benefit of patients who undergo through any surgical procedure because surgery not only includes main action (operation) but also care of the patient before and after surgery. He has also emphasized that aseptic and antiseptic precautions should be taken. The wound should be protected from dangerous and invisible creatures. Every surgical procedure is done under these three parts only. Each *Karma* has got its own importance. We cannot skip any of them and it is very important in order to get good result. *Acharya Sushrut* also emphasised on diet which is given before and after any surgery. He also explained about septic and antiseptic precautions to be done before, during and after surgery. He also mentioned about fumigation of patients ward after 7-10 days of surgery.

INTRODUCTION

Sushrut, the father of surgery about 500 BC has been unapproachable to the medical science of the day because of its original availability. *Ayurvedic* principals which are dovetailing with basic concept of life have significant value even in modern era. *Shalya* is meant for extraction of various types of metal, bone, hair, nails, pus, vitiated ulcers, cuts and wound. *Shalya* means body which cause harmful effect to body.

Sushrut categorized surgical activity into three parts.

1. *Purva Karma* (Pre-operative)
2. *Pradhan Karma* (Operative)
3. *Paschat Karma* (Post-operative)

Purva Karma

It is first step of any surgery or basic requirement to perform a operative procedure. *Purva karma* includes collection of all the required materials for *Pradhan Karma* i.e. main action. *Acharya Sushrut* has explained some rules related to the *Purva Karma* like preparation of the patient sterilization and anesthesia. *Acharya Dhalan* also mentioned about sterilization. Separate ritual called *Raksha Karma* had been given by *Acharya Sushrut* and *Vagbhat* in which some *Mantras* to be chanted by the surgeon for the patient who shows a great concern of surgeon towards patient welfare. *Acharya* had also given emphasized on complete history taking and physical examination of the

patient by inspection, interrogation and palpation. *Acharya Sushrut* has also explained muniments for the surgeon desirous of performing an operation should be collected like instruments (Blunt and sharp instruments), caustic, fire, props,, horn (shring), leaches, gourd (blood sucking apparatus like alabu), cotton, gauze piece, suture, bandages, milk, oil, honey, *Kashaya* (decoction), *Lapan dravyas*, fan, cold water, hot water and bowel etc. and most important attendant (*Parikarminah*) who are strong and affectionate towards the patient welfare, *Sushrut* has also described the pre-operative appreciation of foreign body its size shape and exact location within the body and appropriate instruments for its removal should be selected pre-operatively. *Acharya Sushrut* has also mentioned about pre-operative diet and starvation for various types of surgeries. The patient should be specially interrogated from the patient, residence, climate of the locally concerned, caste and race. Before all operations the patient should take light diet. The patient should completely starving before such surgical procedures as artificial and instrumental delivery, piles, fistula in ano and surgical condition of the mouth. It has been mentioned that aseptic precautions before any surgical procedure all instruments should be heated up to red hot to prevent infection. Ayurveda throws light upon cleansing measure and special preparatory method which comes under *Upkarmas* of *Vrana* (12 of the 60 *Karmas*).

- *Aptarpana*
- *Alepa*
- *Parisheka*
- *Abhyanga*
- *Swedan karma*
- *Vimlapana*
- *Upnaha*
- *Paachana*
- *Rakta mokshana*
- *Snehapana*
- *Virachana*
- *Vamana*

Procedue of Purva Karma

On the day and time having auspicious stellar constellation, *Agni*, *Brahman* and physician should be worshipped first with offering of curd, rice and jems then perform sacrificial rites and chant *Mantras*. The patient is given light food facing east and the surgeon should be opposite to patient while performing the procedure.

Pre-Operative Procedure

The pre-operative period starts from patient admitted to the hospital and time surgery begins. Steps to be taken during pre-operative procedure.

History taking

Specific question is asked to the patient aiming at clear diagnosis and intensity of symptoms, onset, duration and relieving factor should also be documented.

Examination of the patient

Systemic examination includes CNS, CVS, RRS.

Investigation

CBC, HB, PCV, PSR, BTCT, Blood group and cross matching should be done.

Informed consent

It is very necessary before any measure surgery.

Nil by mouth

Patients are advised not to take solid food before six hours of surgery. Fluid should be given within two hours before anesthesia.

Preparation of part

The field of operation should always be examined carefully to exclude any septic spot. The extent of skin preparation should be well beyond the field of operation. The skin is prepared before operation.

Care of bowel

In anorectal surgeries anemia should be given twice. In case of constipation laxative should be given or prescribed 36 hours before the surgery. And patient must have morning anemia before he goes to Operation Theatre. If the patient bowel habit is normal soap water anemia or Proctolysis Anemia is sufficient in the morning.

Administration of anesthesia

To ensure that patient does not feel any type of pain during surgery.

Skin preparation and draping

Skin preparation includes surgical site and area around it, starting from the incision and working away from it. Contaminated areas like exile, perineum should be covered last. Two coats of any antiseptic are usually done (1% iodine). Draping of skin create a protective zone around the operative site. Both disposal and re-usable draps are suitable. Once in a place they should not be disturbed.

Pradhan Karma (Operative)

Shastra Karma is included in *Pradhan Karma* and every surgeon must know the surgical procedure before doing the main surgical procedure worship of *Agni*, *Brahman* should be done.

The surgical procedures or types of operation according to different authors.

According to *Sushruta* there are 8 types of *Shastra Karma*:

- *Chedhana*
- *Bhedhana*
- *Lehana*
- *Eshana*
- *Aaharana*
- *Vedhana*
- *Visravana*
- *Seevana*

According to *Charka* there are 6 types of *Shastra Karma*:

- *Paatana*
- *Vydhana*
- *Chedhana*
- *Lekhana*
- *Prachana*
- *Seevana*

And according to *Vagbhata* there are 13 types of *Shastra Karma*:

- *Chedhana*
- *Bhedhana*
- *Lehana*
- *Eshana*
- *Aaharana*
- *Vedhana*
- *Visravana*
- *Seevana*
- *Uthpaatna*
- *Kuttana*
- *Manthana*
- *Grahana*
- *Dahana*

According to *Ashtang Sanghra* there are 12 types of *Sharta Karma*:

- *Chedhana*
- *Bhedhana*
- *Lehana*
- *Eshana*
- *Aaharana*
- *Vedhana*
- *Visravana*
- *Seevana*
- *Paatana*
- *Kuttana*
- *Manthana*
- *Grahna*

Chedhan Karma

It means excision or ectomy and it is indicated in diseases like fistula-in-ano, piles, and *Arbudas* (Tumor).

Bhedhana Karma

It means incision or otomy means opening a cavity to drain out collected pus. It is indicated in *Vidradhi* (Abscess), *Stan Vidradhi* (Breast Abscess), *Antra Vidridhi*. Incision should be made in the direction of hairs. It should be oblique I the region like eye brows, cheeks, temple, fore head, eye lid, lip, groin region, axilla. The incision should be circular or semi-circular in the upper or lower limb, anus and penis.

Lekhan Karma

It means scrapping or scarification. The surgical operation known as scarification should be resorted to in the following diseases:

- Four types of *Rohini* (Diphtheria).
- *Kilasa* (Leukoderma)
- *Upajihva* (Uvulitis)
- *Vidarabha*
- *Granthi*
- *Varanvartam* (Disease of eye lid)
- *Arsh* (Haemorrhoids)
- *Mandala* (Tuberculoid Leprosy)
- *Mansa-kandi* (Keloid)

Eshan Karma

It means probing by using different types of probes and it is indicated in *Nadivrana* (Sinus), *Salya Anaveshana* (Deduction of foreign bodies).

Aahran Karma

It means extraction by using *Dant shanku*, *Nakhpatra* and *Aungli* etc. indications are *Paada Parkara* (Corn in foot), *Mood Garbha*. It is also indicated in five types of *Vidridhi*, *Ekdeshaj Shopha* (Inflammatory Oedema confined to the place), *Slipada* (Filariasis) all kind of *Arbuda* (Malignant Tumor)

Vedhana Karma

It means bloodletting or pus drainage by using different needles, *Sharari Mukha*, *Trikurchak*, *Adhi mukh shastra* etc. it is indicated in 5 types of *Vidridhi* except *Sanni Pataj* and *Vataj Kushta*, in all types of *Arbud* and all kinds of *Visharpa*, three kinds of *Granthi*, *Stan rog* and *Galashaluka* (Epiglottis).

Seevan Karma

Means suturing by using different types of needle according to body parts. It is indicated in tumor which have been in size and scrapped well in traumatic wounds and disease localized unmovable joint.

There are different types of *Seevan Karma*:

Seevan type	Suture type
<ul style="list-style-type: none"> • <i>Rhuju granthi</i> • <i>Anuvelita</i> • <i>Gofnika</i> • <i>Tunna sevani</i> 	Interrupted suturing Continuous suturing Blanket or button hole suturing Subcuticular suturing

After having used the sharp instruments the patient should be re assured then spray cold water dashed over the face and the eyes of the patient. The site of incision should be firmly pressed and the margin of the wound should be rubbed with finger. The wound should be irrigated by medicated decoction after that a poultice made of different kinds of should be applied over it and the hole should be bound up with the thick layer of *Kavalika* which are neither too irritant nor too cooling in their effect and the bandaging should be done.

Type of Bandha	Body parts
<ul style="list-style-type: none"> • <i>Kosha</i> (Sac like) • <i>Dama bandha</i> (round wound) • <i>Anuvellita</i> (twisted, bent Underneath) • <i>Swastika</i> (Cruciform) 	Fingers and joints of finger and thumb Painful parts Extremities Joints, between brow, breast, palmsoles and ears over meta tarsals
<ul style="list-style-type: none"> • <i>Yamaka</i> (with two folds) • <i>Mutoli</i> (broad) • <i>Mandala</i> (circular) • <i>Sthagika</i> (stump like) • <i>Cheen bandha</i> (T-bandage) • <i>Khatva</i> (Hammock like) • <i>Vibandha</i> (binding from side To side) • <i>Vitana</i> (tent like) • <i>Gophana</i> (like horns of cow) • <i>Panchangi</i> (five tailed) • <i>Utasangi</i> 	Two wounds side by side Neck ad penis Round or cylindrical parts of the body Tip of the thumb, finger and penis Outer canthus of eye Temples, cheeks and lower jaw Abdomen, chest and back Head Nose lips, shoulder and chin Parts above the shoulder Upper limb

Paschat Karma

It means post-operative measures after surgical procedure dressing and bandaging of wounds should be fumigated by using drugs like *Sarson*, *Agru*, *Nimbhi* tree etc soaked in a clarified butter. The patient must be kept in post-operative ward (*Vranitagr*). Fumigation of ward should be done for 10 days twice a week. The old bandage should be opened on the third day re applied exactly as before. After 3rd day further dressing, lotions, ointment, bandages and diet and the period of ambulation depends on the condition of the wound and general conditions of the patient. In winter and spring the dressing should be changed every third day and in summer and rainy season every 2nd day. *Acharya Vaghbhat* also described about sterilization of the bandages, it should be sterilized and fumigated. *Acharya Sushrut* mentioned that patient health should always be maintained as it helps to lessen the intensity of the disease process. The

patient must be very careful in sitting, standing, moving and changing of position.

Vranitopasana-Care of wound: routine operation wound are seen on 7th day and stitches are removed if there is no infection. In emergency surgery with dirty peritonitis wound is seen on 5th day for early diagnosis of wound infection. For faster recovery of patient should avoid *Viharas* like *Vyayama*, *Harsha*, *Krodh*, *Bhaya*, *Vyavaya* and *Diva swapana*. Secondly *aharas* which are *Amala*, *Ruksha*, *Teeshna* and *Ushana*.

Post-Operative Procedure

The post-operative period starts from the time patient leaves the operation room and ends when the patient resumes normal life.

Positions of Patient

- Pillow should not be placed underneath the head in spinal anesthesia to avoid spinal headache.
- Foot should be elevated to relive effect of anesthesia.

Diet

- Fluid must be given in a restricted manner. Start with a sip of water and gradually increase to a glass of water.
- On next day of operation semi solid food can be given and from third day onward normal diet.

Raksha Karma

It means measure of protection. It is recital of certain mantras for the quick recovery of the patient.

Vranitagara

Acharya Sushrut in *Agropaharaniya Adhyay* mentioned that soon after *Raksha Karma* the patient should be shifted to *Aatura Aagara*.

In *Vranitopaasaniya Adhyay Sushrut* tells that the ward where the patient resides should be free from dirt, heavy breeze, sunlight.

DISCUSSION

In Ayurveda *Purav Karma*, *Pradhan* and *Paschat Karma* has been explained in different context. Acharya Sushrut has explained *Purav* and *Paschat Karma* mainly pertaining to *Shastra Karma*. *Agropaharana* i.e., the collection of material required before and after surgery has been explained by Sushrut. In Ayurvedic classic, Acharya Sushrut in the context of *Ashmari Chikitsa* has explained significances of consent pre-operatively. Acharya Sushrut has explained specially regarding the position of patient i.e. east direction which tells about the proper light during the surgery. Acharya Sushrut also mentioned regarding *Vrandhoopana* and *Vranitagara* which help in sterilization and faster wound healing. Acharya Sushrut also explained *Raksha Karma* which is done to destroy witch called *Kritya* and removes the fear of *Rakshasas*. This procedure aims at making the patient psychologically strong. In the context of *Panchkarma* Acharya Vagbhat and Acharya Charak has explained different types of *Purav Karmas* like *Paachana*, *Deepana*, *Snehana*, *Swedana* and *Paschat Karma* like *Paeyadisamsarjana*. Acharya Sushrut has explained *Pradhan Karma* specifically to *Shastra Karma* and *Agropaharana* i.e., the collection of the material before and after surgery.

CONCLUSION

Every surgery require common thing that all required exclusive pre-operative care. Proper pre-operative management which includes physical examination, interrogation, collection of material, preparation of patient if done properly give fruitful result after *Pradhan Karma*. Same way the outcome of post-operative care is of most important for the quick recovery of the patient. Acharya Sushrut who

is considered father of surgery was well aware of this fact and gave it utmost preference which can be observed as he mentioned a complete chapter on pre-operative management of surgical patient. Lastly we came to the conclusion that every surgery procedure which follows proper *Trividh Karma* result in foolproof surgery and final result of surgery mainly depends upon *Paschat Karma* management if followed properly.

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