



ISSN 2456-3110

Vol 4 · Issue 6

Nov-Dec 2019

Journal of  
**Ayurveda and Integrated  
Medical Sciences**

*www.jaims.in*

# JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences



**Charaka**  
Publications

Indexed

# A theoretical review on Shalya Tantra (Surgery) methodology in Ayurveda

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## ABSTRACT

Sushruta was known as the first ever surgeon to develop cosmetic surgery and know a father of plastic surgery. Sushruta Samhita is only complete Textbook which deals with the problems of practical surgery in details. Sushruta wrote the 'Sushruta Samhita' as an instruction manual for physicians to treat their patients holistically. The most popular physician of Ayurveda, Acharya Charaka, also recommended Shalya Tantra to treat certain diseases that needed immediate attention; for example, Bhagandar, Arsha, Mudhgarbha etc. Instruments used in Shalya tantra, as described in Ayurvedic texts, which were made mainly from wood, stone, broad leaves, branches of trees and various other natural materials. The unique way of naming any surgical tools after the animals or birds are adopted even today. *Yogya*, training was given to any medicos to build prior to actual surgery. A very elaborative description was given in Sushrutsamhita about surgical types, instruments, suturing, Bandhan, informed consent, Shalyagar which is still a standard method in each of these.

**Key words:** Shalya, Bhagandar, Arsha, Mudhgarbha, Bandhan etc.

## INTRODUCTION

Sushruta's original text discusses in very detailed manner about various surgical methods that include how to handle different types of tumors, fracture of bones, internal and external injuries, complications during child delivery, and obstructions in intestinal loops etc. Shalya Tantra is the branch of Ashtang Ayurveda is to remove (from an ulcer) any extraneous substance such as, fragments of hay, particles of

stone, dust, iron or bone; splinters, nails, hair, clotted blood, or condensed pus (as the case may be) or to draw out a dead fetus of the uterus, or to bring about safe parturitions in cases of false presentation and with the application of heat (cautery) and alkaline (caustic) substances, together with the diagnosis and treatment of ulcers. In fact, Sushruta was known as the first ever surgeon to develop cosmetic surgery and know a father of plastic surgery.

The brilliant use of numerous surgical instruments i.e. Shashtra, Anushastra has explained in the Sushruta Samhita. In ancient time, Instruments were either made of wood, stone or other such materials. The reason Shalya Tantra has a quite widespread branch of Medicine as it could provide fast relief compared to the slower process of recovery from herbs or medicines. The most popular physician of Ayurveda, Acharya Charaka, also recommended Shalya Tantra to treat certain diseases that needed immediate attention; for example, bhagandar, arsha, mudhgarbha etc. According to Sushruta, it is best to use Shalya tantra when any disease or the condition

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Submission Date: 18/11/2019 Accepted Date: 19/12/2019

### Access this article online

#### Quick Response Code



Website: [www.jaims.in](http://www.jaims.in)

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for which medicine is not cure it or it beyond merely medicinal repair. In cases like cysts, abscesses, enlarged lymph nodes, hemorrhoids, kidney and bladder stones, urinary retention, and breast related diseases, he advised to use Shalya tantra. The treatment not only gives faster relief to the person suffering but is also beneficial in circumstances when the internal medicine fails to cure.

### AIMS OF STUDY

To review on Surgical methods and its concept from Sushruta Samhita in Ayurveda.

### MATERIALS AND METHODS

Review regarding Surgery, various methods, instruments, types of surgical methods were done from various Ayurved textbooks like Sushruta Samhita, published journals etc.

### Discussion on Surgical Methodology in Ayurveda

Shalya tantra treatment was very popular in the ancient times mainly because it provided fast relief compared to other processes. Sushruta may be attributed the glory of elevating art of surgery as one of the top branches in medical field. As this branch is about Surgery in total, practical surgery requires a good knowledge of practical anatomy. For illnesses that demanded immediate treatment Shalya Chikitsa was the most preferred method. The only major drawback of Shalya tantra was probably the lack of appropriate aseptic precautions during those days. Besides, the instruments used were raw and crude and hence use them caused pain.

Acharya Sushruta had expressively developed different surgical techniques (such as using the head of an ant to sew sutures) and, most notably, invented the practice of cosmetic surgery. His specialty was rhinoplasty, the reconstruction of the nose, and his book instructs others on exactly how a surgeon should proceed.

### Ancient Instruments used for Surgery

Shalya tantra is one of distinct of Astanga Ayurveda will teaches us surgical knowledge and procedure that are performed and used by thousands of years.

Instruments used in Shalya tantra, as described in Ayurvedic texts, were made mainly from wood, stone, broad leaves, branches of trees and various other natural materials. A creeper or the climbing plant was used in place of ligatures. Surgery cannot be thought of without use of instruments. Surgical instruments are the means of extracting the Shalya (any foreign or extraneous substances which troubles the body and mind alike) from its seat or place where it is embedded.

Acharya Sushruta explained 101 instruments and Vagbhata mentions it's innumerable. The names of the instruments are given as per their shapes resembling to the animals, birds etc. e.g., Simhamukha (Lion Forceps), Shararimukha (like Sharari bird -Scissor).

This unique way of naming surgical tools after the animals or birds are adopted even today. His Samdamsa Yantras are the first forms of the modern surgeon's spring forceps and dissection and dressing forceps. Diagnostic instruments like Nadiyantra and their principles were first laid down by Sushruta, which took several modifications with advent of technology to attain present form of Endoscopes.

### Yogya - A Pre training to learn practical surgery

To attain competence in surgical processes, the medicos of Dhanvantari were asked to try their knives repeatedly first on natural and artificial objects resembling the diseased parts of the body before undertaking an actual Surgery. E.g. Incision was practiced on pushpaphala (Cucurbita maxima) Alabu (Longenaris vulgaris), venesection was practiced on the vessels of dead animals and on the stalks of the water-lily. This type of training was known as Yogya, with this training confidence of surgeon was built prior to actual surgery.

### Ashtavidha Shastra karma - Eight surgical procedures

Ashtavidha Shastra Karma	Eight surgical procedures
Chedana	Incision, Amputation or Excision
Bhedana	Incision for opening a cavity or Taping of cavity

<i>Lekhana</i>	Scraping
<i>Vyadhana</i>	Paracentesis or Puncturing
<i>Eshana</i>	Probing
<i>Aharana</i>	Extraction
<i>Visravana</i>	Bloodletting or drainage of pus
<i>Seevana</i>	Suturing

### Suturing

The threads used may be of silk, cotton, jute, human hair, horse hair, Snayu(tendon), inner bark of tree, tendril etc. The needles may be of straight, round body, straight triangular, curved, half curved, curved triangular etc.

### The types of suturing are;

Rujugranthi (Simple interrupted), Anuvellita (Simple continuous), Gophanika(Blanket sutures), Tunnasevani (Lambart, Subcuticular) etc. In surgery how skinsuturing should be done to avoid the complication is most important. It should not too long from margin otherwise may be painful and should not be too close from margins otherwise they will cut through (Su. Su. 25/26).

### Bandhana (Bandaging)

A detailed account of utilization of bandages in post-operative care of the wound and also in fracture management is also noteworthy. Medicos were told to learn fourteen varieties of bandaging methods on dummies

### Importance of written consent

In case of surgery in *Ashmari* before planning the surgery on urinary bladder Acharya Sushruta was advised to take prior permission from king before operative surgery on the patient, so even now a days we have to take permission of patient as well as parents /relative for any major or minor surgery as per ethics.

### Glimpses of ancient surgical practices

Surgery was advised by Sushruta at the ancient time which is practicing today in following diseases. Eg. *Mutravrudhi* (vaginal Hydrocele), *Baddhagudodar*

(Intestinal obstruction), *Jalodar* (Ascitis), *Chhidrodar* (Intestinal perforation), *Arsha* (Hemorrhoids), *Bhangandar* (Fistula-in-Ano), *Mudhagarbha* (IUD-intrauterine death) and *Kaphaj-lingnas* (Catract).

### CONCLUSION

The different methods of surgery described in Sushruta samhita has been proven and sound scientific even today's advanced surgery branch. Acharya Sushruta has given concept of Plastic surgery to the world before thousand years ago and known as "Father of Plastic Surgery" for inventing and developing surgical procedures. Even today Plastic surgeons take impression from Shushruta Samhita and many researches is ongoing to make some reference as evidence base in this era.

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**How to cite this article:** Dr. Shilpa Nandkumar Duddalwar, Dr. Vaishali Vasant Nakhale, Dr. Sandip Dayaram Waghmare. A theoretical review on Shalya Tantra (Surgery) methodology in Ayurveda. J Ayurveda Integr Med Sci 2019;6:212-215.

**Source of Support:** Nil, **Conflict of Interest:** None declared.

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