



Review Article

THE SPECIFIC APPLICATIONS OF YANTRAS AND SHASTRAS: A LITERARY REVIEW AND RECENT DEVELOPMENTS IN SHALYA TANTRA

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ABSTRACT

Ayurveda is an eternal science that existed in the universal consciousness. Aim of Ayurveda is the maintenance of health in a healthy man and relief from disease in patients. The Ayurveda categorised into eight branches (*Astangas* of Ayurveda) and among some branches deals with different equipments and instruments (*Yantras* and *Shastras*) for different therapeutic purposes. These *Yantras* and *Shastras* are mainly used in surgical and parasurgical procedures. The surgical activities (*Shastra karma*) are of eight kinds viz *Chedhana, Bhedhana, Lekhana, Vedhana, Eshana, Aharana, Visravana* and *Seevana* requires utilisation of different *Yantras* and *Shastras*. Ancient acharyas gives their opinion about the number of *Yantras, Shastras, Anushastras*, etc, according to their view. According to Acharya Sushruta there are 101 *Yantras*, 20 *Shastras*, 25 *Upayantras* and 14 *Anushastras*. These are the major equipments used in Ayurveda surgery. The development has seen for any surgical operation major/minor in terms of surgical instruments (blunt/Sharp). Patients preparation requirements and operation theatre equipment and drugs required for anaesthesia, sterilization requirements, medicine, etc.

INTRODUCTION

Shalya tantra is the science of Ayurveda which deals with extraction of *Shalya* from the body. It utilizes different surgical and parasurgical interventions for treating disorders of deep tissues, wounds, cuts, *Arsha*, fistula, etc. *Shalya* are those which produce trouble to the mind and body. The *Yantra* and *Shastra* are the surgical instruments mainly used for removal of *Shalyas* from the body and also for curing various diseases. The term "*Yantra Sastra Kshara Pranidhanaat*"^[1] tells the measure adopted in *Shalya tantra* are *Yantras* (blunt instruments), *Shastra* (sharp instruments), *Kshara, Agni*, almost all the surgical procedures are drastic and definitely effective. *Shalya yantra* is mainly used to treat the diseases like *Arsha, Bhagandara, Gridhrasi, Kushta* and also given

different types of parasurgical procedure for different disease depends upon the condition.

Trividha karma of *Shalya tantra* are

1. *Purva karma* is preoperative (preliminary measures)
2. *Pradhana karma* is operative (principle therapeutic / surgical)
3. *Paschat Karma* is post operative (after measures)

The *Purvakarma* includes the preparation of the patient, sterilization and anaesthesia. The *Pradhana karma* utilizes all the main equipments of surgery. This stage includes different *Shastra karma* depends upon shape and uses. The procedures like *Chedhana, Bhedhana, Lekhana, Vyadhana, Seevava, Eshana, Aharana, Visravana*. The *Paschat karma* is immediate post operative periods critical one includes the pain management, along with diet is advised.

Equipments/ Instruments

Shalya tantra is one among the eight branches of Ayurveda where it requires and utilizes the equipments or instruments for the surgical and parasurgical procedures. The instruments that are used for the removal of different types of *Shalya* which

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are found in different regions of the body are known as *Yantra*. For visualisation of *Arsha*, *Bhagandara*, etc. *Gati* (brass, glass or clay), *Alabu* (the hollowed gourd), *Sringa* (Horns), *Salaka* (rod like instruments), are also considered in Ayurveda surgery [2]. *Shashtra* are the devices or instruments which causes injury (intentional injury by surgeon) to the tissues is considered as *Shashtra*.

The instrument are used for various purposes as shown in figure 1.1 [3]

<i>Chedhana</i>	Excision
<i>Bhedhana</i>	Incision
<i>Lekhana</i>	Scraping
<i>Eshana</i>	Probing
<i>Aaharana</i>	Extraction of <i>Shalya</i>
<i>Vedhana</i>	Puncturing
<i>Visravana</i>	Draining
<i>Seevana</i>	Suturing

Brief on Yantras

According to *Acharya Sushruta* the *Yantras* are 101.

Yantras are broadly classified into 6 types-

- 1) *Swasthika yantra* / Cruciform instruments - 24
- 2) *Sandamsha yantras* / Pincers/ Forceps- 2
- 3) *Tala yantra* / Instruments with flat discs- 2
- 4) *Nadi yantra* / Tubular instruments- 20
- 5) *Shalaka yantra* / Rod like instruments - 28
- 6) *Upayantras* / Accessory instruments - 25

Swasthika yantras

They are 24 in number and approximately 18 inches (around 36 cm) long.

Salient features:

They are designed like the mouths or beaks of different wild animals, tamed animals and birds. They are made chiefly from iron, shaped like a *Masura dala* /Cotyledon of a lentile at its edges, held by a river/bolt at their neck, slightly bent like an *Ankusha*/goad of elephant at its root. The blades are crossed in the centre and riveted with a nail or bolt (*Madhye/ Keelava baddhani*). The handle of the instruments either recurved or ringed to pass the thumb and finger for a strong grip.

They are used to remove *Asthi vinashta shalyas* i.e., foreign bodies which are deep seated.

The basis of naming *Swasthika yantras* with a prefix of some animal or bird is indicative of the strength of the instrument. Some of the names given by *Sushruta* are added below.

- 1) *Simhamukha* - Lion forceps
- 2) *Vyagra mukha* - Tiger forceps

- 3) *Vruka mukha* - Wolf forceps
- 4) *Tarakshu mukha* - Hyena forceps
- 5) *Ruksha mukha* - Bear forceps
- 6) *Dweepi mukha* - Leopard forceps
- 7) *Marjala mukha* - Cat forceps
- 8) *Srugala mukha* - Jackal forceps
- 9) *Mruga mukha* - Deer forceps
- 10) *kaka mukha* - Crow forceps

Sandamsha Yantra

The second type of blunt instruments the *Sandamsha* / pincher like forceps comprises only of two kinds,

A) The forceps with handles (*Sanigraha sandamsha yantra*)

B) The forceps without handles (*Anigraha sandamsha yantra*)

These *Yantras* are 16 *Angula* (finger breadth) in length is used for extracting foreign bodies and eye lashes.

Talayantra

The third class of blunt instrument is called *Talayantra*. *Talayantras* are of two kinds, i.e., *Eka talayantra* and *Dwitala yantra*.

Both are 12 *Angula* in length, resembling the palate of the fish in shape and the one type with flat disc at its mouth and the other one with two flat disc.

Used to remove foreign bodies from external ear. As per *Sushruta samhita* it is useful for removing foreign bodies from ear, nose and sinuses. Instruments like tongue depressor, sim's vaginal speculum etc.

Nadi yantra/tubular instruments

Nadi yantras are tubular instruments, with one or more openings, useful for viewing the different orifices and *Srotases* for diagnostic and therapeutic purposes, recognising foreign bodies and diseases localised in the channels of the tissues for facilitating treatments and for sucking. They are 20 in number. Their width, circumference and length depends upon the size, shape etc. of the channels.

Brief on Shastras

Any device or instrument which causes injury i.e., intentional injury caused by the surgeon during operation to the tissue is considered as *Shashtra*. The nature of injury depends upon the type of instruments and nature of operation.

According to *Sushruta*, *Shastras* - sharp instrument are 20 in number.

1. *Mandalagra sastra*- Round knife does *Chedhana* (excision) and *Lekhana* (scarifying, scratching) *karma*
2. *Karapatra sastra*- Surgical saw and does *Chedhana* (excision), and *Lekhana* (scarifying, scratching) *karma*

3. *Vrddhipatra sastra*- Bistuar does *Chedhana* (excision) and *Chedana* (cutting, dividing) *karma*.
4. *Nakha sastra*- Nail parer does *Chedhana* (excision) and *Bhedhana* (cutting, dividing) *karma*
5. *Mudrika sastra*- Finger knife does *Chedhana* (excision) and *Bhedhana* (cutting, dividing) *karma*.
6. *Utpalapatra sastra*- Lancet does *Chedhana* (excision) and *Bhedhana* (cutting, dividing) *karma*.
7. *Ardhadhara sastra* - Curved lancet does *Chedhana* (excision) and *Bhedhana* (cutting, dividing) *karma*.
8. *Suchi sastra* - suturing needle does *Visravana* (draining), *Vyadhana* (puncturing), *Seevana* (suturing) *karma*.
9. *Kusapatra sastra* - scalpel does *Visravana* (draining)
10. *Atimukha sastra* - Short scissor does *Visravana* (draining)
11. *Shariramukha shastra* - Long scissors does *visravana* (draining out fluid)
12. *Antarmukha sastra* - Curved lancet does *Visravana* (draining)
13. *Trikurchaka sastra* - Does *Visravana* (draining)
14. *Kutharika shastra*- Surgical axe does *vyadhana* (Puncturing, pricking) *karma*
15. *Vrihimukha sastra* - Trocar does *Vyadhana* (Puncturing)
16. *Ara sastra* - Thick spike does *Vyadhana* (Puncturing)
17. *Vetasapatra sastra* - scalpal does *vyadhana* (puncturing)
18. *Badisa sastra*- Sharp hook does *Aharana* (extraction) *karma*
19. *Danta sanku sastra* - Teeth Scraper does *Aharana* (extraction) *karma*
20. *Esani sastra* - Sharp probe does *Esana* & *Anulomana* (probing).

Modern Correlation

1. *Arsha yantra*- (Proctoscope)
2. *Dwichidra* used to visualise the rectum and the anal canal. *Eka chidra* is used for procedure like *Kshara patan* in *Arsha* [4].
3. *Bhagandhara yantra* - In order to find out the internal opening of a fistula.
4. *Uttar basti yantra* - (vaginal douche) To administer *Uttar basti dravya*.
5. *Vrana yantra*- syringe irrigator, it is used in *vrana prakshalana*.
6. *Dakodara yantra* - (trocar and cannula)
7. *Dhooma yantra* - It is used in *Dhoomapana* (inhaler)
8. *Yoni vranekshana yantra* - vaginal speculum
9. *Sringa / Aachushana yantra* - Horn, main purpose of *Yantras* is *Raktamokshana* (blood letting).

10. *Alabu* - the hollowed gourd is useful in extracting *Sleshma* and *Rakta*.
11. *Ghati* - cupping vessel used for cupping the *Gulma* or to open it, *Raktamokshana*.

Shalaka yantras

Rod like instruments are of many functions and shapes.

1. *Garba sanku* - Foetus or traction hook
2. *Karpasayantra* - Swab probes or Removing foreign bodies.
3. *Jambavaushta probes* - For *Kshara* and *agnikarma*
4. *Karna sodhana* - Ear cleaner
5. *Yujna sanku* - Midwifery forceps
6. *Sarapunka mukha* Probe - For loosening the hard objects.
7. *Ardha chandra mukha shalaka* - Half moon probe
8. *Kolasti matra mukha*- Nasal curette.

Recent Developments in Shalya Tantra

1. Enhancement of boundaries of Ayurveda surgery by adding new techniques in recent era.
2. Development of excellence centre in the field of *Ayurveda* for surgical and parasurgical care in different surgical elements especially chronic wounds, anorectal, ASMR and *Mutraroga/urology*.
3. The scope of this branch of medical science 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 bring about safe parturitions in cases of false presentation, and to deal with the principle and mode of using and handling surgical instruments in general and with the application of heat (cautery) and alkaline (caustic) substances, together with the diagnosis and treatment of ulcer.
4. Development of training module expansion of surgical procedure for different pathological conditions innovative is less invasive technique which even requires lesser time of suturing, utilisation of modified instruments/equipments.
5. Sterilization techniques for maintaining hygienic conditions including UV sterilization and steam Sterilization of equipments [5].
6. Maintenance of aseptic conditions while performing surgical intervention where chances of infections are more.
7. Modification of *Shalyagar* to acquire patient and physician comfort.
8. Informed consent form is another feature of modern surgery in which patient or family

members made aware about the procedure and complication of therapy.

9. Advancement in *Agnikarma* and *Jalaukavacharana* etc techniques.
10. Modification and advancement of surgical instruments in modern techniques of *nasa sandhana* (Rhinoplasty), lip repair, etc. and also in techniques like *Langalaka* and *Adhalangalaka* used to remove fistula tract [6].

CONCLUSION

Shalya chikitsa is a Ayurveda practice performed under the heading of *Shalya tantra* branch of Ayurveda which mainly provides therapeutic benefits in *Arsha*, *Bhagandara*, *Charmakeela*, *Kshara*, etc. Ayurveda suggested the use of different types of *Yantras*, *Upayantras*, and *Shastras* in *Shalya chikitsa* for different surgical interventions. Ayurveda *Shalya chikitsa* utilizes various procedures including *Chedya*, *Lekhya*, *Vedhya*, *Esya*, *Ahrya*, *Vsraya*, and *Sivya* for various therapeutic purposes. The advancement in the Ayurvedic surgery includes modernization in sterilization techniques, maintenance of aseptic

condition, and advancement in various anorectal, rhinoplasty and cosmetic surgeries.

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