



# A Comprehensive Review Of Yantras Used In Ayurveda And Its Modern Advancement

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## ABSTRACT

ayurveda is the oldest medical system which utilizes different surgical and para-surgical interventions for treating disorders; wide description is available in ayurvedic classics regarding various surgical instruments (yantra) used in different branches of ayurveda for carrying out clinical examination; medical and operative procedures. surgical instruments such as forceps, dilators, speculums, needles, lancets etc are similar to the 101 yantras mentioned in ayurveda e.g., samdansha yantra, nadi yantra, shalaka yantra, etc. to perform various procedures, use of blunt instruments are described in detail. most of the modern surgical instruments are only slight modifications of the instruments used by ancient hindu surgeons. in this article we have discussed about those yantras (blunt instruments) which are mentioned in ayurveda and their counterparts in modern surgical practice.

**Keywords:** Ayurveda, Yantra, modern surgical instruments.

## INTRODUCTION

For Generations, People In India Have Employed The Traditional Medical System Known As Ayurveda To Maintain A Healthy And Worthwhile Quality Of Life. Shalyatantra Is Ayurveda Branch Of Surgical Practice Which Utilizes Different Surgical And Para-Surgical Interventions For Treating Disorders.<sup>1</sup> It Also Explains About The Extraction Of Shalya, Which Is The Foreign Body Lodged Within The Body. Susruta Is Considered As The Foremost Surgeon In The World To Schematize Surgical Instruments. He Had Defined Their Qualities, Defects, Diagnostic And Treatment Applications Along With Methods Of Manufacture And Preservation.<sup>2</sup>

Sushruta's Innovative Advice For Ayurvedic Surgeons is Swabudhyachapi Vibhajyet, Yantrakarmani, Budhiman, Asankhikeya, Vikalpatwat Shalyanam Iti Nischayah (Su.Su. 8/18) According to Sushruta, Salya's are those which produce trouble to body and mind and the yantras are instruments used for removal of salyas. In Susrutha Samhita he has mentioned 101 yantras and 20 shastras. He has also stated that a surgeon based on his yukthi and knowledge can develop and design any new instruments to facilitate surgical procedures. as a result most of the modern surgical instruments share an astonishing similarity with the instruments explained by Acharya Sushruta. out of all the yantras, hasta is considered as the pradhanantamayantra. This is because the surgical instruments are simply the extension of human hand.<sup>3</sup>

In this review article, we have discussed about yantra which are mentioned in ayurveda and their counterparts in modern surgical practice.

## MATERIAL AND METHODS

for present comprehensive study ayurvedic literature, modern literature and internet are the source.

## LITERARY REVIEW

### Hasta

Among all yantras, hasta is considered as the pradhantamamyant<sup>4</sup> because; surgical instruments are in many ways, simply extensions of human hand.

Ayurvedic classics have described use of hasta in various acts like utkarshan, apkarshan, sthanapavartan, udvartan, bhedan etc. to correct various gynecological conditions<sup>5</sup>.

### Yantra

तत्र, मनः शरीरबाधकराणि शल्यानि, तेषामाहरणोपायो यन्त्राणि | (सु.सू. 07/4)

Foreign bodies that cause pain to Manah and Sharir is called Shalya and the methods to remove these are called Yantras.<sup>6</sup> Based on innumerable Shalyas, Yantras can also be innumerable. But to have bird's eye view, Acharyas have classified Yantras into 101 types<sup>7</sup>. Though Yantras are indicated for specific function but Vaidya, applying his Yukti, can use them accordingly to his purpose and can also invent and make new instruments.

“तानि षट्प्रकाराणि, तद्यथा- स्वस्तिकयन्त्राणि, संदंशयन्त्राणि, तालयन्त्राणि, नाडीयन्त्राणि, शलाकायन्त्राणि,  
उपयन्त्राणि चेति” (सु.सू 7/5)

तत्र चतुर्विंशतिः स्वस्तिकयन्त्राणि, द्वे संदंशयन्त्रे, द्वे एव तालयन्त्रे, विंशतिनाइयः, अष्टविंशतिः शलाकाः  
पंचविंशतिरूपयन्त्राणि || (सु.सू. 7/5)

Yantras can be taken as blunt instruments as per their description in texts. Based on the Aakriti or shape, Yantras are of 6 main types:<sup>8</sup>

1. Swastika Yantra- cruciform forceps (24 varieties)
2. Samdansha Yantra- pincer like forceps (2 varieties).
3. Taala Yantra-pick lock like (2 varieties)

4. Nadi Yantra- tubular instruments like catheters, cannula etc. (20 varieties)
5. Salaka Yantra- bougie like probes and sounds (28 varieties)
6. Upayantra- accessory instruments like dressings, as clothe, twine, etc., (25 varieties)

### Characteristics of a good Yantra:

समाहितानि यन्त्राणि खरक्षक्षणमुखानि च सुदृढानि सुरूपाणि सुग्रहाणि च कारयेत् | (सु.सू. 7/9)

According to Acharya Susrutha, a good Yantra should be-

- a. Susamahitha- suitable in measurement
- b. Khar slashna mukha – hard and soft or smooth mouth
- c. Sudrida- strong
- d. Surupa- nice looking, handsome or attractive in appearance
- e. Sugraha – easy handling

### Swastika Yantra (Cruciform Instruments)

तत्र स्वस्तिकयन्त्राणि- अष्टादशाङ्गुलप्रमाणानि, सिंहत्याघ्रवृक्तरक्ष्वृक्षद्वीपिमार्जारशृगालमृगैर्वारुककाकक  
इकुररचासभासशशघात्युलूकचिल्लिशयेन- गृध्रक्रौञ्चभृङ्गराजाञ्जलिकर्णावभञ्जननन्दीमुखमुखानि,  
मसूराकृतिभिः कीलैरवबद्धानि, मूलेऽङ्कुशवदावृत्तवारङ्गाणि, अस्थिविदष्टशल्योद्धरणार्थमुपदिश्यन्ते || सु.सू. 7/10

When opened they resemble a swastika so named as swastika yantra also called artery forceps or mid-wifery forceps. These are 18 Angula long. These are 24 in number, out of which 9 are pashumukhi (resemble the face of animal) and 15 are pakshimukhi (resemble the face of bird).

#### Pashumukhi yantra

1. Simha Mukha (Lion Forceps)
2. Vyaghra Mukha (Tiger Forceps)
3. Vrika Mukha (Wolf Forceps)
4. Tarakshu Mukha (Hyena Forceps)
5. Riksha Mukha (Bear Forceps)
6. Dweepi Mukha (Panther Forceps)
7. Marjara Mukha (Cat Forceps)
8. Srigala Mukha (Jackal Forceps)
9. Mrigairvaruka (Deer Forceps)

#### Pakshimukhi yantra

1. Kaka Mukha (Crow Forceps)
2. Kanka Mukha (Heron Forceps)

3. Kuraramukha (Osprey Forceps)
4. Chasa Mukha (Bluejoy Forceps)
5. Bhasa Mukha (Eagle Forceps)
6. Sashaghati Mukha (Hawk Forceps)
7. Ulooka Mukha (Owl Forceps)
8. Chilli Mukha (Kite Forceps)
9. Shyena Mukha (Vulture Forceps)
10. Gridhra Mukha (Vulture Forceps)
11. Krouncha Mukha (Catlew Forceps)
12. Bhringaraja Mukha (Butcher Bird)
13. Anjalikarna Mukha
14. Avabhanjana Mukha
15. Nandimukha Mukha

Pashumukhi yantra are thick and heavy; they are used to remove shalyas which are visible externally. Pakshimukhi yantra are like neck of birds; thin, slender and long; they are used to remove shalyas which are deep inside the body. These are used to remove Asthigatashalya (foreign bodies from bone).<sup>9</sup>

### Samdansa Yantra (Pincer Like Forceps)

सनिग्रहोऽनिग्रहश्च संदशौ षोडशांगुलौ भवतः। तौ त्वड्मांससिरास्नायुगतशल्योद्धरणार्थमुपदिश्येते।। (सु.सू 7/11)

Samdansa means to catch or hold.

These are of two types:

- a. Sanigraha (With Catch)
- b. Anigraha (Without Catch)

These are 16 Angula long. These are used to extract Shalya from Twak, Mamsa, Sira, Snayu.<sup>10</sup>

कीलबद्धविमुक्ताग्रौ सन्दशौ षोडशांगुलौ । त्वक्सिरास्नायुपिशितलग्नशल्योपकर्षणौ षडंगुलोऽन्यो हरणे  
सूक्ष्मशल्योपपक्ष्मणाम् ॥ (अ.ह.सू. 25/7-8)

मुचुण्डी सूक्ष्मदन्तर्जुमूले रुचकभूषणा । गम्भीरव्रणमांसानामर्मणः शेषितस्य च ॥ (अ.ह.सू. 25/9)

Acharya Vagbhata has described them as:

- a. Sanibandhana (with catch)
- b. Nirnibandhana (without catch)
- c. One type of Samdanshyantra is six Angula long and half Angula wide. It is used to catch Akshipaksham, Vrana and Adhimamsa.<sup>11</sup>

अनिग्रहो ऽनिबन्धनः सुवर्णकारस्येवः अन्ये तु सनिग्रहो लोहकारसंदंश इव कीलबद्ध इति मान्यन्ते। (सु.सू. 7/11)

Based upon above description, various types of forceps, used these days, can be considered under the category of Samdanshayantra:

- a. With catch: They are also called Locking Forceps e.g. Dressing forceps, Vulsellum (used to catch anterior lip of cervix), Allies forceps, Sponge holding forceps, Needle holder, Artery forceps, Mosquito forceps.
- b. Without catch: They are also called Thumb Forceps or Dissecting Forceps. It is of two types:
  - Plain forceps (used to catch tissue like mucosa and muscle while suturing episiotomy).
  - Toothed forceps (used to catch or hold skin while suturing).

### Taala Yantra-(Pick Lock Like)

तालयन्त्रे - द्वादशांगुले मत्स्यतालुवदेकतालद्वितालके, कर्णनासानाडीशल्यानामाहरणार्थम् ।  
(सु.सू. 7/12)

They are named so because of their resemblance to palate of fish (scoop like). These are 12 Angula long. They are of two types:

- a) Ektaal (having scoop at one end)
- b) Dwitaal (having scoop at both the ends)

They are used to remove Shalya from ear canal, nasal cavity, Naadi

### Nadi Yantra (Tubular Instruments)

Nadi yantra are Anekprakarani, Anek prayojanani, Ekatomukhani, Ubhayatomukhanani, and Its length is Srotodwarparinahan Vathayogdirghani.

Briefly they are used for following purposes:

- a) Srotogatashalyauddharnarth - for extracting foreign bodies from the srotas (channels, minute pore etc)
- b) Rogdarshana-nartham (to observe the abnormalities inside the channels)
- c) Aachushanarth -for sucking (vitiated fluids like blood, pus etc)
- d) Kriyasaukaryartham- for convenience of functions (surgical and medical activities)

Even today laparoscopy and endoscopy has same applications.

Some of these are-

1. Arsoyantra with 1 slit and 2 slits
2. Bhagandara yantra with 1 slit and 2 slits
3. Vrana yantra
4. Bastiyantra 3 in number or 4 in number
5. Uttarabasti yantra Male and female 3
6. Mutravridhi yantra 1 in number

7. Dakodara yantra 1 in number
8. Dhuma yantra 3 in number
9. Nirudhaprakasha yantra 1 in number
10. Sannirudhaguda yantra 1 in number
11. Alabu yantra
12. Srnga yantra

Modernisation of shalya karma by nadi yantra started with Laparoscopy, Cholecystectomy, Appendisectomy, Overian Cystectomy, Hysterectomy, Ectopic pregnancy, hysreroscopy Lap. Perforation repair, Lap. Rectopexy, Lap. Hernia Repair, Lap.management of Liver abscess, Lap.Pyelolithotomy, Lap.ureterolithotomy, Lap.Cystolithotomy. Cystoscopy. Gastroscopy and colonoscopy.

### Modern

1. Laparoscope
2. Cystoscope
3. Gastroscope
4. Colonoscope
5. Cholecystectomy
6. Appendisectomy
7. Hysterectomy
8. Pyelolithotomy

### Shalya -Tantra

- Uder Nadi-yanyta
- Mootra Nadi-yantra
- Amasaya Nadi-yantra
- Gud Nadi-yantra
- Pittashaya chhedan
- Antrapuchh chhedan
- Garbhasaya chhedan
- Vrikashmari nirharan

### Shalaka Yantras (Rod-Like Instruments)

These are of many kinds and of many uses. Their length and thickness are found suitable (for their function). Some of these are -

Gandupada mukha (those with their face similar to that of an earthworm - blunt probe)

Sarpaphana mukha (having face of the shape of the hood of the snake - retractors)

Sarapunkha mukha (face resembling the flower of sarpunkha)

badisha mukha (face in the shape of a hook).

They are useful for Esana (searching / probing), Vyuhana (collecting), Chalana (shaking) and Aaharana (extracting / pulling);

Two shalaka with their face of the size (and shape) of a Masura dala (cotyledon of a lentil) slightly bent upward, useful for removing foreign bodies from srotas (channels),

six Shalaka (rods) fitted with cap made of cotton for use in cleaning acts,

three shalaka in the shape of a ladle with face bent down, useful for the purpose of applying caustic alkali;

another three resembling the fruit of Jambu (Eugenia jambolana ), three with their face shaped like Ankusha (elephant goad); six used for branding (thermal cautery), one used for pulling out (extraction) Nasa Arbuda

(polyp or tumour inside the nose) with its face of the size of seed of Kola (fruit of *Zizyphus jujuba* Plank) with bent and sharp lips, one useful for applying collyrium to the eyes, round in shape with thickness of a Kalaya (round pea) its two ends being in the shape of a flower bud; one useful for cleaning the urinary passage (urethra), round in shape of the thickness of lip (end) of the stalk of a Malati (jasmine) flower.

Salaka Yantras are probes, dilators, scoops, swab sticks, rods for branding, applying collyrium, urethral sound, uterine sound etc.

### **Upa Yantras – (Accessory Instruments)**

Rajju (rope), venika (plait / thread wound in three strings or knitted in three parts), putta (sheet of leather or cloth), Charma (leather), Antarvalkala (thin inner layer of bark of trees), Lata (creeper), Vastra (cloth), Asthilasma (hard stone), Mudgara (mortar), Panipada tala (palm and sole), anguli (fingers), Jihva (tongue), Danta (teeth), Nakha (Nails), Mukha (mouth), vala (hairs) Avakataka (Horses bridle), Sakha (Branch of tree), shyvana (spittle, act of spitting), pravahana (straining), harsa (joy excitement), ayaskanta (magnet), ksara (caustic alkali), agni (fire), bhesaja (medicine)

These can be made use of all over the body, in all its parts, organs, joints, alimentary tract and arteries (blood vessels)<sup>12</sup>.

### **CONCLUSION**

Shalyatantra is considered as the ayurvedic part of surgery. It provides in-depth explanations of the manufacturing processes, types, advantages and disadvantages, sharpening techniques, karmas, properties, and applications for surgical instruments in a variety of conditions. Despite the fact that the science is around 5000 years old; the advanced instruments which is utilized in the present period extraordinarily look like them in most ways. In different words the modern instruments are simple modifications of instruments which are made of by Susrutha. This is further demonstrated by the uses and properties of the instruments and the circumstances where they are utilized. This can be visible as a progression in ayurvedic surgery. finally this article by expressing that further examinations and research ought to be done in all field of ayurveda to understand the ideas and treatment modalities and modern equipment's modifications must be brought about based on its ideology.

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