



CO-RELATION OF ANCIENT YANTRA AND MODERN SURGICAL INSTRUMENTS-A REVIEW

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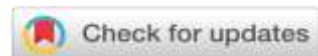
<https://doi.org/10.46607/iamj0912052024>

(Published Online: May 2024)

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Article Received: 11/04/2024 - Peer Reviewed: 29/04/2024 - Accepted for Publication: 13/05/2024.



ABSTRACT

Introduction-Ayurveda is an ancient medical science, and Surgery is one of *Ayurveda's* oldest modalities of the medical system; it is believed that ancient Indian scientists explored essential knowledge of *Shastrakarma*. *Ayurveda* contains detailed descriptions of the techniques and practices of the great ancient surgeon *Sushruta*. Who has considerable surgical knowledge that is relevant even today also. The ancient surgical science was known as *ShalyaTantra*. *Sushrut Samhita* elaborates on *Yantra* and *Shastras*, used for various *Shashtra karma*. *Shalyas* affect both *Manas* and *Shareera*; *Yantras* are used to remove this *Shalya*. Now a day's same techniques are used for pain management. Efforts in this article are to correlate *Sushrutokta* Ancient *Yantra* with modern surgical instruments/equipment. **Materials and methods:** *Ayurvedic* and Modern Texts and Websites. **Result:** Many *Yantras* are like modern surgical Instruments in appearance, and modern ones with different names now adopt Funclikeh. **Conclusion:** As time progressed and new metals (like stainless steel and copper) were invented, the shape and length of instruments changed. But the aim of the instruments remains the same, i.e., the removal of *Shalya*.

Keywords: Ancient *yantra*, Modern Surgical Instruments, *Ayurveda*, *Shalya*, *Shastrakarma*.

INTRODUCTION

Introduction: *Ayurveda* is an ancient medical science; surgery is one of *Ayurveda*'s oldest modalities of the medical system, and it is believed that the ancient Indian scientist explored essential knowledge of *Shastrakarma*. *SushrutSamhita* provides valuable insights into ancient surgical practices. *Ayurveda* contains detailed descriptions of the techniques and practices of the great ancient surgeon *Sushruta*. *Acharya Sushruta* has contributed significantly to the field of *Shalyatantra*. The ancient surgical science was known as *ShalyaTantra*. *Sushrut Samhita* has elaborately described *Yantra* and *Shastras* as used for various *Shastrakarma*. *Shalyas* affect both *manas* and *shareera*;

Yantras are used for their *aaharan* (removal) of these *shalya*.

yantraśatamēkōttaram; atra hastamēva pradhāna-tamam yantrāṇāmavagaccha, (kim kāraṇam? yasmāddhastādītē yantrāṇāmapravṛttirēva) tadadhīnatvādyantrakarmaṇām (Su. Sutra3/7)

According to *sushruta*, *yantras* are 101 in number. Among them hand is the *Pradhan tama*; instruments are not used without a hand because of dependence on the former. *Yantra Shastra* should be of proper size, and their ends should be rough or polished. They should also be strong, well-shaped, and have a firm grip.

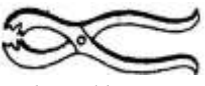











Yantras are broadly classified into six types: Total-101

Sr.No.	Name	No.of Yantra	Sr.No.	Name	No.of Yantra
1	Swastik Yantra	24	4	Nadi Yantra	20
2	Saduansh Yantra	02	5	Shalaka Yantras	28
3	Tala yantra	02	6	Upayantra	25

SWASTIK YANTRA-24

- 1.1. Length 18 angulas.
- 1.2. Their ends were shaped like the faces of wild beasts and birds, so their names were.
- 1.3. shaped according to that shape.
- 1.4. The fulcrums are in the middle and of a masura in size.
- 1.5. Handles are rounded off or bent at an angle at their ends.
- 1.6. Used for the extraction of foreign bodies impacted in the bones.

Sr.No	Name of Yantra	Sr.No.	Name of Yantra
1	Kaka Mukha (Crow Forceps)	9	Sheyamukha (Sparrow hawk forceps)
2	Kanka Mukha (Heron Forceps)	10	Gridhra Mukha (Vulture Forceps)
3	Kuraramukha (Osprey Forceps)	11	Kraunchmukha (Crane Forceps)
4	Chasa Mukha (Bluejoy Forceps)	12	Bhringaraja Mukha (Butcher Bird)
5	Bhasa Mukha (Eagle Forceps)	13	Anjalikarna Mukha
6	Sashaghati Mukha (Hawk Forceps)	14	Avabhanjana Mukha
7	Ulooka Mukha (Owl Forceps)	15	Nandimukha
8	Chilli Mukha (Kite Forceps)		

Ancient Yantra		Modern surgical instruments	
 <i>Simhamukha Yantra</i>	 <i>Vyaghramukha Yantra</i>	 Bone nibbler	 Allis Forceps
 <i>Kakamukha Yantra</i>	 <i>Kankamukha Yantra</i>	 Cheatele forceps	 Henry Gray cholecystectomy Forceps
 <i>Tarakshamukha Yantra</i>	 <i>Vrikamukha Yantra</i>	 Aural Forceps	 Layheys thyroid valseillum

SANDAMSHA YANTRA 2

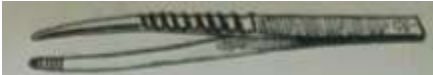



Those with a firm grip over the shalyas are known as *sandamsha*.

They are 16 angula in length.

Used to extract the *Shalyas* from the soft structures like *Twak*, *Mamsa*, *Sira* and *Snayu*.

The *Sandamsha Yantras* can be correlated to the Dissecting forceps used in modern surgery.

Two types- *Sanigraha* and *Anigraha*.

Ancient <i>Sandamsha Yantra</i>	Modern surgical instrument
 <i>Anigraha Sandamsha Yantra</i>	 Plain Forceps
 <i>Sanigraha Sandaumscha Yantra</i>	 Tooth Forceps

TALA YANTRA 2


Talayantras are 12 angula in length.




Shaped like the *tal* of a fish.

Instruments with one *tala* resemble one lip of the fish, and those with two *talas* represent its entire face.

Used for extracting foreign bodies from the ear, nose, and sinuses in the body.

The *talayantras* can be correlated to the Scoops used in modern surgical procedures.

Name	Use	Modern surgical instruments
<i>Ektal yantra</i> Like a talu of fish, one end	To remove Ear,Nose,sinuses, foreign bodies, and wax.	 Ear scoop
	For retraction during surgeries.	

		 Right Angle Retractor
<i>Dwital</i> Like a talu of fish, both ends	To scoop cavities, ulcers, and granulation tissue.	 Volkman's scoop
	For retraction during surgeries.	 C-shaped retractor

NADI YANTRA-20









Nadi yantras are hollow tubular instruments.










The *NadiYantra* is described to be of various kinds and many purposes.

They are open either at one or both ends.

Used to extract foreign substances from different *srotas* of the body.












Used as a diagnostic apparatus for inspection of diseases in the canals.

<i>Yantra-Nadi</i>	Uses	Modern correlations
1. <i>Bhagandara Yantra-2</i> (<i>Dwichidra, Ekachidra</i>)	To find out the internal opening of a fistula	Anoscope 
2. <i>Arshoyantra-2</i> (<i>Dwichidra Ekachidra</i>) 	<i>Dwichidra</i> -used for examination. <i>Ekachidra</i> -used for karma	Proctoscope 
3. <i>Vranayantra-1</i>	<i>Vrana Prakshalana</i>	Syringe irrigator. 
4. <i>Basti yantra-4</i> 	<i>Basti chikitsa</i>	Enema pot 
5. <i>Uttar basti yantra-2</i>	To administer <i>Uttar Basti Dravya</i>	Rubber ball vaginal douche A simple red rubber catheter  

6. <i>Mutravrudhi stravan Yantra-1</i>	<i>Vistraavan</i>	Trochars canula 
Yantra-Nadi	Uses	Modern correlations
7. <i>Dakodar stravan Yantra-1</i>	<i>Vistraavan</i>	Trochars canula 
8. <i>Dhoomnetra yantra-3</i> 	<i>Dhooma pana</i>	Inhaler 
9. <i>Nirudhaprakha yantra-1</i>	Dilatation	Disposable urethral dilatation Catheters 
10. <i>Sannirudha guda Yantra-1</i>	Dilatation	Anal dialator 
11. <i>Alabu Yantra-1</i> 	<i>Raktamokshana</i>	Cupping glasses 
12. <i>Shringa Yantra-1</i> 		

SHALAKAYANTRA -28

Sr.No.	Name of Yantra	Sr.No.	Name of Yantra
1	<i>Gandupadmukha -2</i>	7	<i>Darvyakruti-3</i>
2	<i>Sarpaphina -2</i>	8	<i>Jambavvadanaa-3</i>
3	<i>Sharpunkha -2</i>	9	<i>Ankushvadana-3</i>
4	<i>Badishmukhi -2</i>	10	<i>Kolasthidalmatramukha-1</i>
5	<i>Masurdalmatramukhi-2</i>	11	<i>Anjanartha-1</i>
6	<i>Karpaskrutoshnish-6</i>	12	<i>Mutrmargavishodhanartha-1</i>

Name of Yantra-Shalaka	Use	Modern correlation
<i>Gandupadmukha</i> -2 Blunt,like the head of an earthworm	<i>Eshana Karma</i>	Blunt Probe 
<i>Sarpaphina mukha</i> -2looks like a hood of a snake	<i>Vyuhana karma</i>	Retractors Doyens' retractor  Deavers retractor 
<i>Sharpunkha mukha</i> -2 The end looks like the leaves of <i>Sharapunkha</i> .	Used for <i>Chalan Karma</i>	Tooth elevator. 
<i>Badisha mukha</i> -2 It resembles a fine fishing hook	Used for <i>Arma nirharana</i> . To remove the <i>shalya</i>	Hook 
<i>Karpaskrutoshnish</i> -6 <i>Shalaka</i> is covered by karpas or cotton	For wiping	Swab probe 
<i>Ankush Vadana</i> -3 Shape-elephant drivers goad	<i>Agni karma</i>	Agnikarma Shalaka 
<i>Kolasthidalmatramukha</i> -1 Sharp at the periphery and depressed at the middle	Extraction of <i>Nasa Arbuda</i>	Electrocautery 
<i>Anjan Shalaka</i> Length-8 <i>angula</i>	<i>Anjan Karma</i>	Nasal curette 
<i>Mutramarga Vishodhanartha</i> Ends are rounded like a stalk of <i>Malati Pushpa</i>	urethral canal dilatation	Kajal shalaka 
		Urethral sound/Bouge 

UPAYANTRA-25



Upayantra are like yantras, but they are mediocre to them.

Upayantra can be used according to the body's needs in *Sandhi, Koshta, Dhamani*, and organs.

Sr.No.	Name of Yantra	Sr.No.	Name of Yantra
1	Rajju	14	Danta
2	Veni	15	Mukha
3	Patta	16	Kesh
4	Charma	17	Ashwakantak
5	Valkal	18	Shakha
6	Lata	19	Ayaskant
7	Vastra	20	Pravahan
8	Ashthilashma	21	Sthivan
9	Mudgar	22	Harsha
10	Panipadatal	23	Kshar
11	Anguli	24	Agni
12	Jeebh	25	Bheshaj
13	Nakha		

Upayantra	Use	Modern correlation
Rajju	Arishtha Bandhan	Thread 
		Tourniquet 
Venika	bandhan	Crepe bandage. 
Patta	Bandhan	Bandages 
Charma	To seal wound	Skin grafting 

Upayantra	Use	Modern correlation
<i>Valkal</i>	The inner bark of trees like <i>palash</i> and <i>Udumbara</i> is used for bandhan to immobilise bhagna.	Splints, cast for fracture management. 
<i>Vastra</i>	Clothes, bandages.	Surgical gowns, Gauze, Mops 
<i>Mudgara</i> (Made up of wood)	For moving foreign bodies embedded in Bone	Hammers in Orthopedic surgery 
<i>Panipadatal</i>	<i>Vimlapan</i> , Reduction of fracture	Fracture reduction
<i>Anguli</i>	<i>Vimlapan</i> , <i>Eshana</i> , <i>Pidana</i> .	P/R, P/V examinations To hold instruments and equipment.
<i>Jivha</i>	Removal of <i>Netragat Shalya</i>	Autoclaved Soft swabs 
<i>Mukha</i>	Used for suction	Suction machine/vacuum suction. 
<i>Bala</i>	Horse or human hair for <i>Sivan karma</i>	Suturing materials Catgut Silk 
<i>Ashwakatak</i>	Removal of <i>Asthigata Shalya</i>	Forceful extraction of foreign body
<i>Shakha</i>	Removal of deeply seated <i>Shalya</i>	Forceful extraction of foreign body

Upayantra	Use	Modern correlation
Shteevan	Kapha and Mukhagat Sookshma Shalya nirharana.	Expectoration Endoscopes are used to remove FB.
Pravahan	Vata Mutra Purish Garbha Sangh	Bearing down During labour.
Harsh	Dukha Rupi Shalya	Counselling in case of psychological disorders
Ayaskantha	Sukshma Loha Shalya nirharana	electromagnets
Kshara	Chedan Bhedan and lekhana karma	Ksharsutra 
Agni	Agnikarma	Diathermy for hemostat Agnikarma in pain management 
Bheshaj	Vrana Shodhana, Ropana, Kshalana Pooyarupi Shalya nirharana	External application, internal medicines

Sushruta had explained the use of Yantras as mentioned above. The quality and defects of Yantras are also enlightened.

Qualities of Yantras:

“ samāhitāni yantrāṇi kharaślakṣṇamukhāni ca | sudrdhāni surūpāṇi sugrahāṇi ca kārayēt ” (Su.Sutra.9/7)

Instruments should be made of the proper size with rough or smooth mouth (as required), firm, good-looking and well-handled.

Defects of Yantras: “ta-
tra, atishūlam, asāram, atidīrgham, atihrasvam, agr
āhi, viśamagrāhi, vakraṁ, śithīlam, atyunnatam, mṛd
ukīlaṁ, mṛdumukhaṁ, mṛdupāśam, iti dvādaśa yantr
adōśāḥ ” (Su.Sutra.19/7)

Too thick, too light, too big, too small, non-catching, unevenly catching, crooked, loose, too elevated, softly wedged, softly mouthed and softly gripped- these are defects of Yantras.

CONCLUSION

Shalya causes pain in the mind and body; Yantra is helpful for removing them. According to Sushruta, Yantras are 101 in number, and hand is undoubtedly the chief one as without hand, there is no activity of

instruments because of being dependent on the former. Kankamukha is an important Yantra as mentioned in Samhita. Sushruta had enlightened the Defects and qualities of Yantras. Many Yantras are like modern surgical instruments in appearance and function, but modern ones with different names now adopt them. As time progressed and new metals (like stainless steel and copper) were invented, the shape and length of instruments changed. But the aim of the instruments remains the same, i.e., the removal of Shalya.

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Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Nandkishor V. Borse & Manisha Pingale: Co-relation of ancient yantra and modern surgical instruments-a review. International Ayurvedic Medical Journal {online} 2024 {cited May 2024} Available from: http://www.iamj.in/posts/images/upload/893_902.pdf