



Original Article

The Legacy of Śastras: Surgical Innovation in Ancient Ayurveda and Modern Perspectives

Dr Priyadarshini D J¹, Dr H. S. Harshitha²

¹Assistant Professor, Department of PG and Ph.D Studies in Shalya tantra, JSS Ayurveda Medical college & Hospital, Mysuru.

²Assistant Professor, Department of PG Studies in Kayachikitsa, JSS Ayurveda Medical college & Hospital, Mysuru.

OPEN ACCESS

Corresponding Author:

Dr Priyadarshini D J

Assistant Professor, Department of
PG and Ph.D Studies in Shalya
tantra, JSS Ayurveda Medical
college & Hospital, Mysuru.

Received: 12-05-2026

Accepted: 20-06-2026

Available online: 31-07-2026

Copyright © International Journal of
Medical and Pharmaceutical Research

ABSTRACT

Surgery is one of the most important branches of medical science, and its success depends greatly on the proper use of surgical instruments. Millions of surgical procedures are performed worldwide every day, and surgical instruments play a vital role in ensuring precision, safety, and successful outcomes. Even with skilled surgeons, the absence of appropriate instruments may compromise the effectiveness of a procedure. The importance of surgical instruments has been well recognized in Ayurveda since ancient times. Acharya Sushruta, regarded as the Father of Surgery, provided a comprehensive description of Śastras (sharp surgical instruments) in the Sushruta Samhita. He elaborated on their classification, design, indications, methods of manufacture, and maintenance of sharpness. The detailed knowledge of surgical instrumentation described by Sushruta reflects the advanced state of surgical science in ancient India. In addition to Sushruta, other classical Ayurvedic texts such as Ashtanga Hridaya, Harita Samhita, Hastiayurveda, and Yogaratnakara have also documented various Śastras and their applications in surgical practice. This review aims to explore the conceptual understanding, classification, utility, and significance of Śastras in Ayurvedic surgery and their relevance in contemporary surgical practice.

Keywords: Sastras, Sushruta Samhita, Astanga Hridaya, Haritha Samhita, Hasti Ayurveda, Yogaratnakara.

INTRODUCTION

Yantras are the blunt instruments and Sastras are the Sharp instruments that are considered as two important aspect of the Surgery. Surgical equipment have been identified as one of the main factors contributing to an infection outbreak following surgery, even in most successful cases. The Surgeons in the ancient time consist of good number of surgical instruments. Acharya Susrutha mentioned 20 types of Sastras.¹Acharya Vagbhata mentioned 26 kinds of Sastras.²Haritha mentioned 12types of Sastras in HarithaSamhitha.³Palakapya mentioned 10types of Sastras in Hasthi Ayurveda(Treatment for Elephants).⁴

MATERIALS FOR INSTRUMENTS:

Acharya Susrutha says – ‘A Wise Surgeon should get the instruments made of pure iron and with sharp edges by an expert blacksmith who is skilful and experienced in his craft’.⁵ Acharya Charaka mentions to cut the navelcord of the newborn ardhadhara type of instrument made of gold, or silver or iron.⁶Yogarantakara mentioned a cautery of gold, to burn fistulous track around the anus.⁷

EDGES FOR SHARP INSTRUMENTS

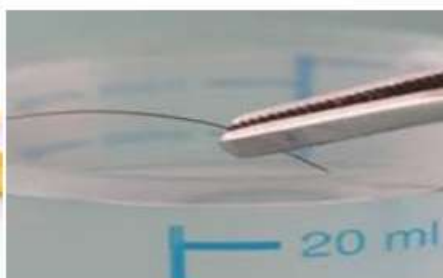
Four different types of edges:⁸

- Masuri : Bhedana(incision) Eg: Vridhipatra, Nakhashastra
- Ardha masuri : Lekhana(scraping) Eg :Mandalagra
- Kaishiki : Vyadhana(puncturing) Eg :Kutharika

- Visravana (draining) Eg: Kushapatra.
- Ardha Kaishiki : Chedana(excision) Eg :Vriddhipatra.
- But Acharya Vagbatta mentions as a Masuri



Edge of the lentil



Edge of the hair

TYPES OF SASTRAS ACCORDING TO VARIOUS ACHARYAS:

ACHARYA SUSHRUTA 20 TYPES	ACHARYA VAGBATT -26 TYPES	HARITHA SAMHITA -12 TYPES	HASTI AYURVEDA (PALAKAPYA)-10 TYPES
Mandalagra	Mandalagra	Ardhachandra	Vriddhipatra
Karapatra	Vrddhipatra	Vrihimukha	Kusapatra
Vrddhipatra	Utpalapatra	Kankapatra	Mandalagra
Nakhasastra	Adhyarddhadhara	Kutharika	Vrihimukha
Mudrika	Sarpasya	Karavirakapatraka	Kuthari
Utpalapatra	Esandupadamukha, Sucimukha	Salaka	Vatsadanta
Arddhadhara	Vetasa	Karapatraka	Utpalapatra
Suci	Sarari	Badisha	Salaka
Kusapatra	Trikurccaka	Grudhrapada	Suci
Atimukha	Kusapatra	Suli	Rampaka
Sararimukha	Ativadana	Suci	
Antarmukha	Antarmukha	Mudgara	
Trikurccaka	Vrihibaktra		
Kutharika	Kuthari		
Vrihimukha	Kura Vakasala		
Ara	Anglisastra		
Vetasapatraka	Badisa		
Badisa	Karapatra		
Dantasanku	Kartari		
Esani	Nakhasastra		
	Dantalekhana		
	Suci		
	Kurcca		
	Khaja		
	Acha		
	Karnavedhani		

Table no. 1 - Types of Sastras according to different Acharyas

TEMPERING OF SHARP INSTRUMENTS (SHAstra PAYANA):

1) Three types of tempering for sharp instruments:9

- Kshara payana : for chedana of shara, shalya and asthi.
- Udaka payana : for chedana, bhedana and patana of mamsa.
- Taila payana : for sira vyadhana and chedana of snayu.

2) Acharya Vrudha Sharangadhara mentions about Payana of arrow heads with paste of Pippali, Saindhava and Kushta with Gomutra and heated to red hot. In another instance he mentions about smearing Sastras with Panchalavana, Sarsapa and Madhu and heat them in furnace followed by dipping in water. When the color resembling those of a peacocks feather are displayed then the burning is adequate.¹⁰

3) Muni Sukracharya mentions the Payana of swords in Brihat Samhita. A milk from mare, a camel and an elephant, mixture of fish bile, deer milk, horse milk, goat milk, blended with toddy and then with Arka Ksheera, Aja sringa, Paravatha sakrut is fit for piercing stone.¹¹

GOOD AND BAD QUALITIES OF SURGICAL INSTRUMENTS:

Acharya Susruta mentioned it should have a well-made handle, affording a firm grasp, it should be made of iron of good quality, it should have fine edge, a pleasant shape and a well finished point.

Acharya Susruta points out eight defects of the instrument – they must not be bent, or blunt, or broken, or jagged, or too thick, or too thin, or too long, or too short.¹²

Acharya Vagbatta also mentioned same defects.¹³

METHOD OF HOLDING SURGICAL INSTRUMENTS:

- Vruddipatra has to be held in Sadharana Bhaga i.e, junction between Vrunta and Phala. Other Shastras used for Bhedana should be used in the same manner.
- Vruddhipatra and Mandalagra have to be held in supine position most frequently for Lekana karma.
- Trikurchika, Soochi and Kusapatra which are used for Visravana have to be held at the terminal part of the Vrunta specially when operating on – Bala, Vrddha, Sukumara, Naari, Raaja and Raja Putra.
- Vrihimukha has to be held between the thumb and forfinger in such a way that the handle is completely covered by the palm.
- The handle of the Kutharika Sastra has to be held in the left hand and the stroke should be given by the middle finger with the help of fore finger of right hand such that movement is under the control of the thumb.
- Aara, Karapatra and Esani should be held at their Proximal end.

NISANA – SHARPENING OF THE INSTRUMENTS:

- According to Acharya Susruta – For sharpening the blade of the instruments a smooth stone slab of the color of masha varna(black gram) is used.
- For keeping the sharpened blade a pod of Shalamali fruits (with silk cotton inside) should be used.
- SASTRA KOSHA – INSTRUMENT BOX:
- To preserve the edges of the cutting instruments, a case made of wood of Salmali(Bombax Malabaricum) was used.¹⁴
- It should be of 9Anguli width and 12Anguli length and compact, It should be made either from ksauma(linen – linseed), patra(thick and durable dry leaves), oma(wool), kauseya(silk), dukula(inner bark of trees) or mrudu charma(soft leather) bound with string. Well stiched with inner compartments for instruments kept wrapped in wool, its mouth should be clipped tightly with wire.¹⁵



ANCIENT INSTRUMENT CASE

DETAILED DESCRIPTION OF SASTRAS:

SL NO	NAME OF THE INSTRUMENT	APPLICABILITY / USES ACCORDING TO DIFFERENT ACHARYAS	PRAMANA	IMAGES
1	MANDALAGRA – ROUND HEADED KNIFE, SHARP CURETTE:	• It is described as a round for circular headed cutting instrument, It is of two types – vrutta and kshura.¹⁶ • Acharya Vagbhata describes the blade to shaped like the index finger when its nail points towards the palm of hand.¹⁷ • Acharya Susruta recommends in	1. Length is 6 Anguli 2. Palakapya describes length of nine anguli, the handle being six and blade three anguli long. ²⁰	

		scraping away pterygium. ¹⁸ • Cakradatta mentioned for scraping the tongue in jihvakantaka. ¹⁹		 MANDALAGR A SASTRA	
		• The end is full – moon shaped and is directed to be used for scarification on the eyeball. ²⁰ • Used for Chedana and Lekhana Karma.		 SHARP CURETTE	
2	KARAPATRA – SURGICAL SAW OR GIGLI SAW	• It is described as ‘an instrument having the blade in the form of a hand’, the fingers being represented by the teeth of the saw. • The Edge of the instrument is described as rough and serrated and this is the only instrument that need not have a very sharp edge. • It is used in Astichedana, also used for Chedana and Lekhana.	1. <i>Acharya Susruta</i> mentioned its length to be six anguli. 2. <i>Acharya Vagbatta</i> mentioned 10 anguli long and 2 anguli broad.	 KHARAPATRA SHASTRA  GIGLI SAW	
3.	VRUDDHIPATRA – SCALPEL	• It is resemblance to the leaf of medicinal plant Vrudhi. • <i>Acharya Vagbatta</i> mentioned it is of 2 types – one is anchitagram and the second is prayathagram. For using in elevated swelling, it should be straight and in deep swelling it should be curved at the back. • It is used for chedana and bhedana karma and also used for Eshana karma in nadvirana.²¹	1. <i>Acharya Susruta</i> mentioned 6 Anguli long. 2. <i>Palakapya</i> mentioned it is 10 anguli long; the handle being 6 anguli and the blade 4 anguli and 3 anguli broad ²¹	 VRUDDIPATRA SASTRA 	

				SCALPEL
4	NAKHA SASTRA – NAIL PARER:	- used for <i>chedana</i> and <i>bhedana</i> karma. - It is used for cleaning the nails and feet of the elephant. He calls it by the name <i>rempaka</i>.²²	1.Acharya <i>Susruta</i> mentioned length is 8anguli long 2.Acharya <i>Vagbatta</i> mentioned length to be 9anguli 3.<i>Palakapya</i> mentioned having the handle 10anguli and the blade 3anguli long.	 NAKHASHASTRA  NAIL PARER
5	MUDRIKA –	It is also called Anguli	1.Acharya	 MUDRIKA SASTRA
	RING KNIFE :	sastra.	Susrutha	
		• Acharya Vagbatta mentioned	mentioned it	
		that the mouth of anguli sastra	has a cutting	
		looks as if coming out of a	instrument of	
		ring,	the size of the	
		• It is used for chedana and	last phalanx of	
		bhedana of Kantagata roga	index finger.	
			2.Acharya	
			Vagbatta	
			mentioned	
			blade is half	
			anguli long.	

6	UTPALAPATRA –	•The blade of the shastra looks	1.Palakapya	RING KNIFE  UTPALAPATRA SASTRA
	LANCET :	similar to the petal of utpala.	mentioned it to	
		•It has got a sharp edge.	be 8anguli long.	
		•Used for Chedana and	1 and half	
		Bhedhana.	anguli broad	
			and double	
			edged.23	
				 LANCET
7	ARDDHADHARA TYPE OF KNIFE –	•Also Known as Vakra dhaaram. •Acharya Vagbatta mentioned it as Adhyadhadhara Sastra. The shastra is called so because half of the length of the shastra is sharp.	1.According to Acharya Susruta it is 8 Anguli in length; Blade is 2 Anguli board	 ARDHADHARASASTRA  KIND OF KNIFE

				
				BISTOURY
			or 6 Anguli and	
			the blade	
			4Anguli long.	
			The blade is one	
			and half anguli	
			wide and is	
			sharp -edged on	
			both sides.26	
10	ATIMUKHA – SHORT SURGICAL SCISSORS	•The instrtrument which resembles the bird aati(Turdus ginginiamus) is known as aatimukha shastra. •It is used fot visravana karma.	1.Acharya Susruta – Length : Seven and half Anguli Blade : One and half Anguli Handle: Seven Anguli	
				ATIMUKHA SASTRA
				
				SHORT SURGICAL SCISSORS
11	SARARIMUKHA – PAIR OF SCISSORS	•It is a pair of scissors resembling the face of the long beaked bird called Sarari. •Acharya Susrutha mentioned Karttari as synonym and used for Visravana Karma.	1. Acharya Susruta -10 Anguli 2. Acharya Vagbatta – 12Anguli.	

				SHARARIMUKHA SASTRA
				
				PAIR OF SCISSORS
12	ANTARMUKHA –	•Acharya Susruta	1. Acharya	
				ANTARMUKA SASTRA
	EPISIOTOMY	mentioned as another	Susruta -	
	SCISSORS	variety of scissors used for	6Anguli long	
		visravana karma.	and one and	
		•Acharya Vagbatta	half Anguli	
		mentioned as	broad	
		Chandraardham;	2. Acharya	
			Vagbatta- 8	
			Anguli length,	
			blade	
			measuring one	
			half anguli.	
				
				EPISIOTOMY SCISSORS
13	TRIKURCCAKA – DERMA PEN OR DERMA ROLLER	•Acharya Susruta mentioned it as an instrument consisting of three needles fixed on a round wooden handle.	1.Acharya Susruta mentioned length - 8Anguli, Handle - 5Anguli Spike – 3sides	

				TRIKURCCHAKA SASTRA
				
				DERMA ROLLER
14	KUTHARIKA – AXE SHAPED KNIFE OR CHISEL	• Acharya Susruta mentioned it has a small instrument shaped like a teeth of cow. • Palakapya mentioned it as kuthara and is used for chedhana and lekhana karma.²⁷	1. Acharya Susruta – width one Anguli. 2. Acharya Vagbatta – Handle 7 and half Anguli long and thicker and broader balde to be fitted for that.	
				KUTARIKA SASTRA
				
				CHISEL
15	VRIHIMUKHA – TROCAR	• The sharp end is being pointed and shaped like a grain of paddy. • Used in the paracentesis abdomen²⁸ and in tapping the hydrocele.²⁹ • Chakradatta mentioned Vrihimukha sastra in the context of surgical treatment of ascities.³⁰ • Palakapya mentioned Vrihimukha as shaped like a grain of paddy and recommends it for incision and excision of munja.³¹	1. Acharya Susruta: Length – Six Anguli; Body – four Anguli; blade – half Anguli. • Acharya Vagbatta - length of blade to be One and half Anguli.	
				VRIHIMUKHA SASTRA
				
				TROCAR AND

				CANNULA	
16	ARA – AWL	•Used for Vyadhana karma •Palakapya mentioned similar instrument for perforating the ears of the elephants named as karmara or nali.³²	1. Acharya Susruta- length Six Anguli. 2. Acharya Vagbatta – length One anguli.		ARA SASTRA
					BONE AWL
17	VETASAPATRAKA – A KIND OF SCALPEL	•Sastra which looks like a bamboo leaf. •It is used in Vyadhana karma	1.Acharya Susruta: Length-4Anguli Blade- 4Anguli Handle-4Anguli long; 1Anguli wide		VETASAPATRA SASTRA
					A KIND OF SCALPEL
18	BADISA - SHARP	•Acharya Susruta mentioned it	1.Acharya		

				BADISA SASTRA
	HOOK	as the end of the hook is	Susruta :	
		sharply edged and is said to	Length –	
		have the resemblance of new	4Anguli	
		leaf of java (Hordeum	Handle- 5 and	
		Vulgare).	half Anguli	
		•Palakapya mentioned the end	Bend – Sharp	
		being rounded like a wheel. It	and wide bend.	
		is used for raising the	2.Palakapya	
		membranes of the eye. ³³	mentioned	
			8Anguli long. ³³	
				
				SHARP HOOK
19	DANTA SANKU - TOOTH SCALER	•Acharya Susruta mentioned the end is slightly bent, sharp and shaped like the fresh leaf of java(Hordeum Vulgare). •Acharya Vagbatta mentioned the similar instrument called <i>danatalekhana</i>. It is quadrangular in shape, one side being sharp edged and opposite side little	1.Acharya Susruta: Length – Six Anguli; Bend – half Anguli; Tip- flat. 2.Palakapya : Length – 32Anguli Long and equal to tooth of	 DANTASANKU SASTRA  TOOTH SCALER
20	ESANI – SHARP PROBES	•The ends of the probes are generally shaped like a head of the earthworm. •They are used as probes to ascertain the direction of sinuses. •Palakapya mentioned <i>Esani</i> in the surgical treatment of disease of the elephants. He describes three probes – smooth and shaped like collyrium rods.³⁶	1.Acharya Susruta - 8Anguli long. 2.Palakapya - ten, twenty and thirty anguli long respectively. ³⁶	

				ESANI SASTRA
				
				SHARP PROBE

SIX ADDITIONAL INSTRUMENTS BY ACHARYA VAGBATTA :

1. SARPASYA – THIN BLADED CURVED SCALPEL : It has a blade of half anguli and is used for excision of polyps in nose and ears.(fig a)
2. SHALAKA – SHARP PROBE, CATARACT NEEDLE :It is made up of copper with two edges. It is used for vyadhana karma of linganasha (matured cataract).(fig b)
3. KARTTARI – SURGICAL SCISSORS : It is similar to household scissors, used for Chedhana (Excision) of Snayu (tendons), sutra (thread) and kaca (hair).(fig c)
4. KURCHA – NEEDLE CLUSTER FOR PRICKING : It is bundle of 7 to 8 needles fixed on a single circular platform. All needles are cylindrical; 4Anguli in length and is used for kuttana (pricking) in nilika (bluish pigmentation of the body), vyanga(hyperpigmentation on face) and kesasatana (alopecia).(fig d)
5. KHAJA – CHURNER : Application end has eight spikes loaded on a circular platform. It is half Anguli diameter and is meant for blood – letting from the nose by churning with both hands.(fig e)
6. KARNAVEDHANI – EAR LOBE NEEDLE : It is suchi of 3Anguli length for puncturing the ear lobes, its tip resembling the shape of bud of yuthika (jasmine) and one third of it being hollow.(fig f)

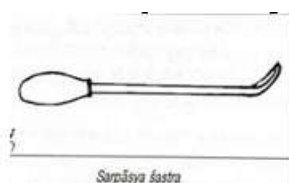


Fig a – Sarpasya Sastra

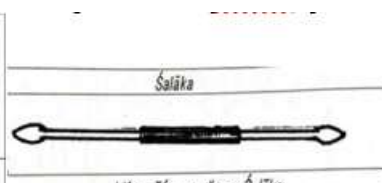


Fig b – Salaka Sastra

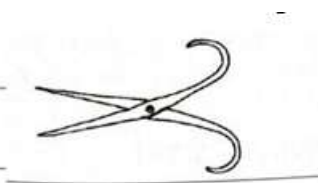


Fig c – Karttari Sastra

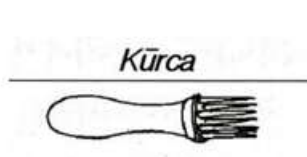


Fig d – Kurca Sastra

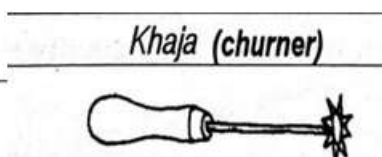


Fig e – Khaja Sastra

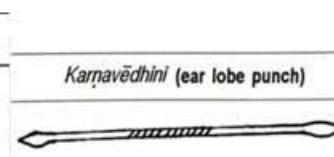


Fig f – Karnavedhini

DISCUSSION:

The nomenclature of surgical instruments has evolved over time. Ancient surgeons closely observed nature and named instruments based on the resemblance of their shapes to animals, birds, or natural objects, such as Aatimukha and Shararimukha Śāstras. In contrast, modern surgical instruments are often named after the scientists or surgeons who developed them, such as Kocher's forceps, Babcock's forceps, and Mayo's towel clip.

Acharya Sushruta emphasized that Śāstras should be made from pure and strong iron. Modern metallurgy has further enhanced instrument quality by incorporating elements such as carbon, chromium, nickel, and silicon, resulting in stainless steel that is corrosion-resistant, durable, and capable of retaining a sharp cutting edge.

Several Śāstras described by Sushruta, including Mandalagra, Vriddhipatra, Karapatra, Soochi, Badisha, and Eshani, continue to have similarities with modern surgical instruments and remain relevant in present-day surgical practice. Some instruments are used in modified forms; for example, Karapatra resembles the modern Gigli saw used for bone cutting.

The methods of handling surgical instruments described by Sushruta, such as pencil grip, fingertip grip, and palm grip, are remarkably similar to modern surgical techniques. He also stressed the importance of maintaining sharpness, proper storage, and appropriate indications for each instrument. The resemblance between ancient and modern surgical instruments highlights the advanced surgical knowledge of ancient Ayurvedic scholars and their lasting contribution to the field of surgery.

CONCLUSION:

Acharya Sushruta was one of the earliest surgeons to provide a systematic and detailed description of surgical instruments and their applications. His concepts regarding the design, quality, handling, maintenance, and indications of Śāstras demonstrate a profound understanding of surgical science. The wide variety of instruments described in the classical texts reflects the advanced nature of Ayurvedic surgery and provides flexibility in instrument selection according to the surgical requirement. The striking similarities between several classical Śāstras and modern surgical instruments further emphasize the scientific relevance of Sushruta's contributions. His pioneering work laid the foundation for the development of surgical instrumentation and operative techniques, justifying his recognition as the "Father of Surgery."

REFERENCE:

1. Murthy, K. R. S. (Ed.). (2017). Sastravacharaniya Adhyaya. In Sushruta Samhita (Vol. 1, p. 52). Varanasi, India: Chaukhambha Orientalia.
2. Sreekumar, T. (Ed.). (2013). Sastravidhi Adhyaya. In Ashtanga Hridaya: Sutrastana (Vol. 2, p. 167). Thrissur, India: Harisree Hospital.
3. Pandeya, J. (Ed.). (2010). Saptapanchashatamo Adhyaya—Bhinna Sastradi Chikitsa. In Harita Samhita (p. 497). Varanasi, India: Chaukhambha Vishvabharati.
4. Mukhopadhyaya, G. (2008). Number of surgical instruments. In Surgical Instruments of Ancient Hindus (p. 70). Delhi, India: New Bharatiya Book Corporation.
5. Murthy, K. R. S. (Ed.). (2017). Sastravacharaniya Adhyaya. In Sushruta Samhita (Vol. 1, Sloka 19). Varanasi, India: Chaukhambha Orientalia.
6. Sharma, R. K., & Dash, B. (Eds.). (2015). Jaatisutriya Shareera. In Caraka Samhita (Vol. 2, Sloka 8/44). Varanasi, India: Chaukhambha Sanskrit Series Office.
7. Kumari, A. (2019). Bhangandaradhikara. In P. V. Tewari (Ed.), Yogaratnakara (Vol. 2, Sloka 12). Varanasi, India: Chaukhambha Vishvabharati.
8. Murthy, K. R. S. (Ed.). (2017). Sastravacharaniya Adhyaya. In Sushruta Samhita (Vol. 1, Sloka 10). Varanasi, India: Chaukhambha Orientalia.
9. Murthy, K. R. S. (Ed.). (2017). Sastravacharaniya Adhyaya. In Sushruta Samhita (Vol. 1, Sloka 12). Varanasi, India: Chaukhambha Orientalia.
10. Mukhopadhyaya, G. (2008). Number of surgical instruments. In Surgical Instruments of Ancient Hindus (p. 50). Delhi, India: New Bharatiya Book Corporation.
11. Mukhopadhyaya, G. (2008). Number of surgical instruments. In Surgical Instruments of Ancient Hindus (p. 50). Delhi, India: New Bharatiya Book Corporation.
12. Murthy, K. R. S. (Ed.). (2017). Sastravacharaniya Adhyaya. In Sushruta Samhita (Vol. 1, Slokas 8–9). Varanasi, India: Chaukhambha Orientalia.
13. Sreekumar, T. (Ed.). (2013). Sastravidhi Adhyaya. In Ashtanga Hridaya: Sutrastana (Vol. 2, Sloka 29). Thrissur, India: Harisree Hospital.
14. Murthy, K. R. S. (Ed.). (2017). Sastravacharaniya Adhyaya. In Sushruta Samhita (Vol. 1, Sloka 13). Varanasi, India: Chaukhambha Orientalia.
15. Sreekumar, T. (Ed.). (2013). Sastravidhi Adhyaya. In Ashtanga Hridaya: Sutrastana (Vol. 2, Slokas 33–34). Thrissur, India: Harisree Hospital.
16. Dalhanacharya, S. R. I. (2021). Sastravacharaniya Adhyaya. In J. T. Acharya (Ed.), Sushruta Samhita Nibandhasangraha (p. 36). Varanasi, India: Chaukhambha Orientalia.
17. Sreekumar, T. (Ed.). (2013). Sastravidhi Adhyaya. In Ashtanga Hridaya: Sutrastana (Vol. 2, Sloka 5). Thrissur, India: Harisree Hospital.
18. Murthy, K. R. S. (Ed.). (2017). Chedya Roga Pratishedha. In Sushruta Samhita (Vol. 3, Slokas 15/5–6). Varanasi, India: Chaukhambha Orientalia.
19. Rao, G. P. (2018). Mukharoga Chikitsa. In Chikitsa Sangraha of Chakrapanidatta (p. 536). Varanasi, India: Chaukhambha Orientalia.
20. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 164). Delhi, India: New Bharatiya Book Corporation.
21. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 168). Delhi, India: New Bharatiya Book Corporation.
22. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 170). Delhi, India: New Bharatiya Book Corporation.
23. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 173). Delhi, India: New Bharatiya Book Corporation.

24. Murthy, K. R. S. (Ed.). (2017). Astavidha Sastrakarmiya Adhyaya. In Sushruta Samhita (Vol. 1). Varanasi, India: Chaukhambha Orientalia.
25. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 176). Delhi, India: New Bharatiya Book Corporation.
26. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 178). Delhi, India: New Bharatiya Book Corporation.
27. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 183). Delhi, India: New Bharatiya Book Corporation.
28. Murthy, K. R. S. (Ed.). (2017). Udara Chikitsa. In Sushruta Samhita (Vol. 2, Sloka 14/18). Varanasi, India: Chaukhambha Orientalia.
29. Murthy, K. R. S. (Ed.). (2017). Vriddhi-Upadamsha-Slipada Chikitsa. In Sushruta Samhita (Vol. 2, Slokas 19/18–19). Varanasi, India: Chaukhambha Orientalia.
30. Rao, G. P. (2018). Udara Chikitsa. In Chikitsa Sangraha of Chakrapanidatta (p. 367). Varanasi, India: Chaukhambha Orientalia.
31. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 187). Delhi, India: New Bharatiya Book Corporation.
32. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 188). Delhi, India: New Bharatiya Book Corporation.
33. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 190). Delhi, India: New Bharatiya Book Corporation.
34. Murthy, K. R. S. (Ed.). (2017). Mukharoga Chikitsa. In Sushruta Samhita (Vol. 2, Sloka 22/22). Varanasi, India: Chaukhambha Orientalia.
35. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 192). Delhi, India: New Bharatiya Book Corporation.
36. Mukhopadhyaya, G. (2008). Sastras—The sharp instruments. In Surgical Instruments of Ancient Hindus (p. 195). Delhi, India: New Bharatiya Book Corporation.