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A critical review of Surgical procedures in Shalyatantra

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Abstract: Shalya Tantra, an ancient surgical discipline, encompasses all techniques aimed at removing elements that cause pain or unhappiness in the body or psyche. Shalya tantra therapy was popular in ancient times since it gave quick relief when compared to other methods. Sushruta is credited with upgrading the art of surgery to one of the most prestigious areas of medicine. Shalya Chikitsa was the favoured approach for conditions that required prompt treatment. Sushruta elevated surgery in mediaeval India to a new level, and the period became known as "The Golden Age of Surgery" in ancient India. The Indian Association of Plastic Surgeons salutes this famous Ayurvedic surgeon by honouring him with a prominent position in the association's logo. In this overview, we've tried to highlight some of the Sushruta Samhita's old surgical principles that are being used today with minor changes. Sushruta's original text goes into great length regarding numerous surgical treatments, such as how to deal with various sorts of tumours, bone fractures, internal and external traumas, problems during childbirth, and blockages in intestinal loops, among other things.

Key words: Shalya tantra, Surgery, Trauma, Operation, Anatomy.

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INTRODUCTION:

Ayurveda is a system that helps people maintain their health by utilising natural principles to bring them back into balance with their actual nature.^[1] Because humans have always been controlled by nature's rule, Ayurveda has been around since the beginning of time. Shalya's sphere of influence i.e., the purpose of the Tantra branch of medical science is to remove any extraneous substance from an ulcer, such as hay fragments, stone particles, dust, iron or bone; splinters, nails, hair, clotted blood; or to draw out a dead foetus of the uterus, 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, as well as to deal with the application of heat. Sushruta's name appears in all of the pioneers in surgery, such as the first to describe dissection, absorbable suture material, equipment, and operating procedures for certain ailments. This list nearly appears to be endless, demonstrating the importance of Indian sciences in the medical arena. The Sushruta Samhita, a systematic study of surgery (general, orthopaedic, plastic, gynaecology, ENT, ophthalmology, and so on), is the first and

finest book on surgery, notably the principles of surgery. Sushruta was considered as the father of plastic surgery and the first surgeon to invent aesthetic surgery.

In the Sushruta Samhita, Anushastra explains the creative use of multiple surgical tools, i.e. Shashtra. Instruments were traditionally constructed of wood, stone, or other natural materials. The reason Shalya Tantra is such a popular area of medicine is that it may give quick relief when contrasted to the slower recovery time from herbs or drugs. Shalya Tantra was also advised by Acharya Charaka, Ayurveda's most famous physician, to treat specific disorders that required rapid treatment, such as bhagandar, arsha, and mudhgarbha. According to Sushruta, Shalya tantra is best used when an illness or ailment is not cured by medication or has progressed beyond medical repair. He recommended Shalya tantra for cysts, abscesses, swollen lymph nodes, haemorrhoids, kidney and bladder stones, urine retention, and breast-related disorders. The therapy not only provides speedier relief to the individual in pain, but it also helps in situations where internal medication has failed to cure.^[2]

Aim

To provide the literary review on Shalyatantra and various surgical methods and their concepts mentioned in Sushruta Samhita in Ayurveda.

Material and Methods

Various Ayurved textbooks like Sushruta Samhita, published articles, books, manuscripts, papers, etc.

An insight from History: During the Vedic time, the Rigveda and Atharvaveda were the primary sources of medical knowledge. Legs were amputated and replaced with iron equivalents, wounded eyes were pulled out, and arrow shafts were taken from the limbs of Aryan soldiers, according to the Rigveda. There are a few references to illnesses and their causes are scattered throughout the Rigveda. Vrana is mentioned in the Atharvaveda's Kaushika Sutra (wound). If the wound is open, the patient should be given pepper corns to consume, and if the wound is closed, the patient should be treated with jalasa (cow's urine). The Sushruta Samhita, Charaka Samhita, and Astanga Sangraha all have thorough descriptions of Vrana. The wordings of triologies are followed by later authors. Sushruta has a number of chapters dedicated to the idea of Vrana.

The mention of the Ayurvedic Shalya Tantra term is incomplete without the mention of Sushruta, the Great Ancient Surgeon. It is fair to assume that Sushruta belonged to the Vishwamitra race. He is described in the Mahabharata as the son of that great sage. This corresponds to the description of him given in the Samhita's current recession. Divodasa is fourth in line of lineage from Dhanvantari, the first profounder of medical science on Earth, according to the Garuda purana, but the Sushruta Samhita depicts the two as identical people. [3] They, it appears, were the ones who lit the world's scientific fire." Science, like art and philosophy, is full of coincidences. The Indians were aware of gravity and blood circulation long before Europeans. [4] When discussing Panduroga, the Harita Samhita, which some experts believe is earlier than the Sushruta Samhita, alludes to blood circulation (Anaemia). He claims that the condition is caused by consuming clay, which plugs the vein lumen and obstructs blood circulation. The preceding couplets are from Bhavamishra, the legendary author of Bhavaprakasha. [5] Sushruta continued to seek the truth, unfazed by his failures and unimpressed by his triumphs, and passed it on to those who

came after him. With reasoned and rational tactics, he took on sickness and deformities head on. He created a road when one did not exist." As a result, it was clear that Sushruta was a master plastic surgeon.^[6]

Dissection of Dead body in terms of Ayurveda

Sushruta outlined the dissection of the cadaver as well as the process for preserving the dead body for the landmark and understanding of anatomy.^[7] Anatomical knowledge is the foundation of a surgeon's education; without it, his profession would be akin to slaughtering animals. Anatomical knowledge is helpful in achieving surgical expertise. Sushruta, an empirical thinker, a research-oriented guy with extensive knowledge, quotes various poems on how to maintain the corpse, which will be useful in acquiring anatomical information in the future. Despite the fact that the ancient method of preservation appears to be primitive, it is a significant one. The procedure of dissection was so carefully explained in the books that it is being used in a modified form today. The entire process, from selecting a deceased corpse to preparing it for dissection, is rather remarkable. Ancient academics were

meticulous in their observation and practical in their approach. He goes on to say that anyone interested in learning about anatomy thoroughly should prepare a dead body and carefully observe (by dissecting it) and analyse different sections.

Ancient Instruments used for surgery

Shalya tantra is a part of Astanga Ayurveda that offers us surgical knowledge and procedures that have been practised for thousands of years. It is impossible to imagine surgery without the usage of equipment. Surgical instruments are used to extricate the Shalya (any alien or extraneous material that causes physical or mental discomfort) from its seat or location.^[8] This definition represents the term 'instruments' in its broadest sense, rather than confining it to physical materials. According to Ayurvedic writings, Shalya tantra instruments were mostly composed of wood, stone, wide leaves, tree branches, and other natural materials. Vagbhata claims that there are many instruments, as revealed by Acharya Sushruta. The names of the instruments are given based on their forms, which resemble animals, birds, and other objects, such as Simhamukha (Lion Forceps), Shararimukha, and so on. His Samdamsa Yantras were the

forerunners of today's modern spring forceps, dissection forceps, and dressing forceps. Sushruta was also the first to establish diagnostic devices such as the Nadiyantra and its principles.^[9]

Sterilisation and Antiseptic measures

The instruments recommended for surgical procedures should be heated before use to avoid the formation of pus. Peacock feathers, Neem leaves (*Azadirachta indica*), Pepper, asafoetida, jatamansi (*Nardostachys jatamansi*), seeds of shalmali (*Bombax malabaricum*), and goat's hair, according to Sharangadahara, should be burned with ghee to purify a sick room. Sushruta recommends fumigating a surgical patient's sick room for 10 days, morning and evening, after the procedure is over.^[10] The surgeon's hair and nails should be shaved short, and he should dress in white sterilised clothing.^[11]

Yogya

It is a crucial stage in the pre-training process for learning practical surgery. To improve surgical effectiveness, Dhanvantari surgeons were instructed to practise with their knives on natural and artificial things that resembled sick body parts before performing an actual surgery. For example, incision was used on Pushpaphala (*Cucurbita maxima*),

and venesection was used on the vessels of deceased animals, among other things. This form of training was known as Yogya, and it was through this training that the surgeon's confidence was created before to the actual surgery.

Some of the Surgical procedures: Acharya Sushruta mentioned that there are 3 kinds of procedures in surgical practice which includes Purva Karma, Pradhana Karma, Paschata Karma and the Ashtavidha Shastra Karma comes under Pradhana Karma.

Purva karma

It is the initial step in every surgery or the most fundamental need for performing an operation. Purva karma involves gathering the necessary resources, as well as patient preparation and surgical preparations. It's a type of pre-surgical preparation that helps you avoid operational and post-operative difficulties.

Sambharsangrahan (collection of required material) - Purva karma requires the patient's preparation as well as the gathering of all necessary equipment for the Pradhan karma. Purva karma entails gathering all pertinent information and preparing the patient for surgery

, which may involve the use of Yantra (sharp instrument), Shastra (blunt instrument), Pichu (pieces of fabric), Sutra (thread), Patta (cloth), Madhu (honey), Ghrita (ghee), and other items.

Consent - Acharya Sushruta mentioned that before any surgery, consent of the patient is necessary. Consent should be obtained by the person who is actually going to carry out the procedure or certainly by somebody who is suitably trained and qualified and has sufficient knowledge of the proposed treatment.

Pradhana karma ^[12,13,14]

It is the main operative procedure. Acharya Sushruta has given eight sort of Shastra karma (surgical procedure).

Chedana: It involves excision of part from the body using Mandalagra, Karpatra, Vridhipatra, Mudrika and Utpalpatra, etc. As per contemporary science, it is the procedure of -ectomy.

Bhedana: It involves incision produces to open a cavity for draining out tissue debris, Rakta, Pus and waste discharge using Vridhipatra, Utpalapatra, etc. As per contemporary science, it is the procedure of -otomy.

Lekhana: It involves scrapping out waste (debris) dead materials from affected part with the help of Mandalagra, Vridhipatra and Karpatra etc.

Eshana: It involves sponging of waste discharge, debris and foreign body etc., with the help of Eshani from affected body parts.

Aaharna: It involves extraction of waste from diseased body parts using Badisha, Dantashanku and Nakha.

Vedhana: It involves puncturing of affected part using needle, Kutharika and Aara etc.

Visaravana: It involves use of needle, Trikurchaka, Shararimukha and Aatimukha for the purpose of bloodletting or draining of pus.

Seevana: It is a para-surgical approach involves use of sutures, needles and threads as post-operative management.

Paschata Karma

The patient should be reassured after the operating procedure by spraying cold water on his face and feet. The wound should be squeezed slowly (all around) and washed with decoction, then any decoction left in the wound should be wiped out with a cotton swab, and a thick paste of Sarshapa (sesamum), Madhu (honey), and Ghrita (ghee) should be applied, followed by medicated

paste and a piece of gauze, and the wound should be bandaged. Following that, medications such as Guggulu, Agaru, Vacha, Lavana, Nimb patra, and others should be used to fumigate the area.

Vranitagara - In Vranitopaasaniya adhyaya, Sushruta tells that the chamber where the patient resides should be free from dirt, infection, so that the patient will not suffer from physical, mental and traumatic disorder. Fumigation should be performed using drugs like Sarsapa, leaves of Arista (nimba) added with Ghrita and Saindava.

Anaesthetics in Indian System of Medicine

Many signs suggested that older surgeons believed such an agent was required to cause pain insensibility. To achieve the desired effect, Sushruta mentions the usage of wine. "Wine should be administered to her after the extraction of a dead baby before the full term," he explains, "since it will enhance the state of her uterus, make her joyful, and reduce the agony of the procedure." There is no anaesthetic literature anywhere in the world prior to this procedure. According to Sushruta, wine should be administered before surgery to promote insensibility to pain in persons who consume wine regularly. He adds that if the patient is not hooked to

alcohol, it is preferable that they be fed before being operated on.^[15]

Rhinoplastic procedures

Sushruta demonstrated the capability of fixing a clip earlobe with a patch of reasonable skin-flap scraped from the neck or the surrounding portion, which was a proud moment for the Ayurvedic community. Nasa sandhan (Plastic surgery - Rhinoplasty) involves measuring the removed section of the nose and taking the same part from the cheek, which is then grafted onto the nose with some part attached for circulation, which aids early recovery. Sushruta was dubbed the "Father of Plastic Surgery" as a result of his work.

Midwifery: Long before fillets and forceps were dreamed of in Europe, the Sushruta Samhita first carefully documented the use of forceps in difficult labour and other obstetric surgeries involving the destruction and mutilation of the infant, such as craniotomy [32]. His recommendations for the control of the puerperal condition, breastfeeding, and child management, as well as the selection of a nurse, are much the same as those made later by other authors.

Arbuda (Neoplasms)^[16,17]

Arbuda literally means "a lump, a tumour, or a polyp." Arbuda, according to Sushruta, are large, globular, mildly uncomfortable, immovable, deep-seated, meaty lumps that do not generally suppurate. They can manifest themselves on any portion of the body's surface. They are caused by tridosha-induced mamsa and rakta derangement. Ancient Hindu physicians and surgeons were fully aware of the phenomena of tumour spread, or metastasis (dwirarbuda). When discussing the treatment of tumours, Sushruta stated that all efforts should be taken to ensure that tumours are completely removed, as partial removal leads to recurrence and, eventually, death. He used the analogy of a little leftover tumour destroying the body, much as a small spark of fire might destroy a building, to illustrate the seriousness of recurrence. The effects of detoxification therapies (Shodhana procedures) on cancer patients as a pre-treatment to conventional treatment revealed that these procedures increased body weight, improved serum immunoglobulins, increased haemoglobin levels, and normalised liver functions, as well

as being helpful in minimising the side effects of chemotherapeutic agents.

To explain, the graveness of recurrence, he gave an example that a small remnant tumour can destroy the body just as a small spark of fire can destroy a house. The role of detoxification therapies (Shodhana procedures) on cancer patients as pre-therapy to conventional line of treatment showed that these procedures increased body weight, improved serum immunoglobulins, increased haemoglobin levels and normalized liver functions, and also helpful in minimizing the adverse effects of chemotherapeutic agents.

Raktamokshana (Bloodletting)^[18-22]

Sushruta's gift to the western world is the practise of bloodletting. For bloodletting in patients with vitiated blood, two different chapters (Jalaukavacharan and Siravedha) were dedicated. Because Rakta is the main stream of the body, Sushruta places a higher value on it as a dosha. As a result, while bloodletting, every effort should be made to avoid removing too much blood, as Rakta is Prana. Plastic surgeons now commonly utilise Jalauka [Leech (*Hirudina medicinalis*)] to ensure optimal transplant acceptance. Many surgeons have found leech application to be

particularly helpful in the treatment of post-trauma hematomas and ischemic situations. A review paper on the medical applications of leeches was published in the United States, but there was no mention of Sushruta or the Sushruta Samhita in the historical study. In this context, one of our Ayurvedic Scholars wrote to the editor of the Journal of Postgraduate Medicine regarding the traditional therapeutic applications of Leeches (Jalaukavacharan) as far back as Sushruta.

Ophthalmic Surgery

Sushruta is credited with the discovery of the skill of cataract-couching. Fifty-one of the seventy-six ophthalmic illnesses are surgical. Acharya Sushruta has detailed the technique of surgery that should be used in each instance in detail.

Fractures and Dislocations

Trauma and its care occupied a significant portion of surgery. Fractures and dislocations are clearly separated by Sushruta, who categorises them separately. Swelling, sensitivity to touch, acute pain, loss of mobility, crepitus, and flaccidity of the limbs were all known symptoms of fractures. Greenstick and hairline fractures were among the twelve forms of fractures reported, as

were compound and comminuted fractures, as well as six different types of dislocations. Anchana (Traction), Pidana (Compression), Samskespha (Immobilization), and Bandhana (Bandaging) are the fundamental procedures indicated for treating fractures and dislocations, and they are on par with modern orthopaedic therapy. Medicinal plasters including plants such as Vata (*Ficus bengalensis* Linn.), Palasha (*Ficus lacor* Buch-Ham.) and others were recommended. Local wound therapy was indicated in complex fractures, and numerous formulations for wound cleaning and healing promotion were advised. Sushruta's approach to fracture and dislocation therapy was reasonable, practical, and even radical, since he was not opposed to breaking and resetting a neglected and malunited fracture.

Discussion:

Shalya Chikitsa was the favoured approach for conditions that required prompt treatment. Shalya Tantra, an ancient surgical discipline, encompasses all techniques aimed at removing elements that cause pain or unhappiness in the body or psyche. Sushruta elevated surgery in mediaeval India to a new level, and the period became known as "The Golden Age of

Surgery" in ancient India. Sushruta recommended surgery in ancient times, and it is being used today in the following disorders, all of which have classical references. Jalodar (Ascitis), Mutrajvrudhi (vaginal Hydrocele), Baddhagudodar (Intestinal blockage), Cchidrodar (Intestinal perforation), Arsha (Hemorrhoids), Bhangandar (Fistula-in-Ano), Mudhagarbha (IUD-intrauterine death), and Kaphaj-lingnas (Intestinal perforation) (Catract). Vedhan karma, or tapping, is required in Jalodar (Ascitis). With the use of a trocher and a canula, vedhan is performed in the belly below and left lateral to the umbilicus to remove some fluid. In Mutraj-vradhi, tapping of fluid accumulated in the tunica vaginalis layer was recommended (Vaginal hydrocele). To avoid harm to the testis, tap on the lateral side of the sevani of the scrotum, and then extract the fluid with the use of the vrihimukh nadiyantra (trocher and canula). In Arsha (Haemorrhoids), Sushruta describes shastra-karma, or pile excision, in pedunculated, wide, and bleeding piles. This indicates that haemorrhoidectomy was conducted in the past. After probing the fistula tract in Bhangadar (Fistula in Ano), it should be raised and the entire tract removed, i.e.,

fistulectomy was conducted during Sushruta's time. Sushruta further claimed that Ksharsutra should be performed on children, the elderly, and female patients since they are comparably weak.

Conclusion :

The concepts of Shastra Karmas application outlined by Acharya Sushruta have shown to be rational and so hold true in the modern period. Acharya Sushruta laid the groundwork for surgical operations that are being used today with updated methods. He has described Trividha chikitsa karma in full, along with the protocols that should be followed after surgery. Under the major topic of Pradhan karma, he has also enumerated eight types of surgical treatments for curing diseased illnesses. After comparing Ayurvedic surgical techniques to current surgical operations, it is clear that Ayurvedic surgical methods were highly developed in the past.

References:

1. Shastri A. (2001) Sushruta Samhita, Part-I (Sutra Sthan, Chapter-15 Verse41), Chaukhambha Sanskrita Sansthan, Varanasi, India. p325
2. Albercht Weber (1892), Weber's History of Indian Literature. Cornell University Library.
3. Bhaskaracharya, Siddhanta

- Shiromani; Goladhyaya.
<http://veda.wikidot.com/bhaskaracharya>
3. Kunjalal K.B. (1916) *The Sushruta Samhita - An English Translation Based on Original Texts.*
 4. Terence M. Davidson M.D. (1977) *The source book of plastic surgery* Edited by Frank McDowell, Illus, Williams & Wilkins, Baltimore. Pp.509
 5. Bhattacharya S. (2009) *Sushruta - our proud heritage.* *Indian Journal of Plastic Surgery.* 42(2), pp.223–225.
 6. Shastri A. (2001) *Sushruta Samhita, Part-I (Shareer Sthan, Chapter-4 Verse49), Chaukhambha Sanskrita Sansthan, Varanasi, India.*
 7. Bhattacharya S. (2009) *Sushruta-Our proud heritage.* *Indian journal of Plast Surgery.* 42 (2), pp.223-225.
 8. Dr. Tripathi B. *Sharangadahara Samhita. Uttarkhanda Chapter-9 Verse 22-24, Choukhambha Subharati Prakashan, Varanasi. India.353*
 9. Sriram Bhat. *SRB'S Manual of Surgery.* 4th ed. New Delhi: Jaypee Brother Medical Publishers, 2013; p. 1244.
 10. Susruta, *Susruta Samhita Vol. I (Edited with Ayurveda Tattva Sandipika) by Kaviraj Ambika dutta Edition Print 2010,*
 11. *Ibidem 1, Vol 1, Sutrasthan: Chapter 25, Verse 6-8. p. 209. 9. Ibidem 1, Vol 1, Sutrasthan: Chapter 25, Verse 9. p. 209,210, 211, 212, 213.*
 12. *Susruta, Susruta Samhita Vol. I (Edited with Ayurveda Tattva Sandipika) by KavirajAmbika dutta Edition Print 2010, Chaukhamba Sanskrit Sansthan. sutra sthan 8/4.*
 13. *Susruta, Susruta Samhita Vol. I (Edited with Ayurveda Tattva Sandipika) by Kaviraj Ambika dutta Edition Print 2010, Chaukhamba Sanskrit Sansthan. Sutra Sthan 25/9.*
 14. Shastri A. (2001) *Sushruta Samhita, Part-I (Sutra Sthana Chapter-5 Verse10.), Chaukhambha Sanskrita Sansthan, Varanasi, India.*
 15. Mishra L.C. (2004) *Scientific Basis for Ayurvedic Therapies.* CRC Press. pp.275-276
 16. Parmar R.K. (1983) *Comparative study of Ayurveda in relation to Neoplastic Lesions and its management by Indigenous Drugs,* M.D. thesis in Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi (UP), India.245

17. Spencer W.G. Discussion on blood-letting. Blood-letting-it's past and present use. Proceedings of the royal society of medicine. 1927; 20(10): Pp.1547- 1574.
18. Menage MJ, Wright G. (1991) Use of leeches in a case of severe periorbital Haematoma. British journal of Ophthalmology. 75, pp. 755-756
19. Townley D, Ramkumar K. (2006) Forgotten digital tourniquet: salvage of an ischemic Finger by application of medicinal leeches. Ann R Coll Surg Engl. 88, Pp. 462-464
20. Porshinsky BS, Saha S, Grossman MD, Beery PR, Stawicki SPA. (2011) Clinical uses of the medicinal leech: A practical review. Journal of Postgraduate Medicine. 57(1), pp.65-71
21. Sathish HS, Vaghela DB. (2011) Blood Letting - An Ayurvedic prespective. Journal of Postgraduate Medicine. 57(3), pp.253-253.

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