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Sushruta's concept of Seevana Karma - A Review Article

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ABSTRACT

Ayurveda is eternal science and considered by many scholars to be the oldest healing science. Ayurveda consists of Ashtangas (8 branches of ayurveda) and Shalyatantra is one and foremost among them. Acharya Sushruta is considered as pioneer of Shalyatantra and contribution of Acharya Sushruta to Shalyatantra are innumerable. Ashtavidha Shastra Karma is unique contribution of Acharya Sushruta. Ashtavidha Shastra Karma includes Chedana, Bhedana, Lekhana, Eshana, Aharana, Vedhana, Visravana, Seevana.[1] These eight specific surgical procedures are useful in the management of all the diseases which require surgical intervention. In the present scenario though modern surgery has developed a lot but the basic concepts remain the same and they are base for these developments. Seevana is one among Ashtavidha Shastrakarma. Acharya Sushruta has emphasised clearly on Seevana Karma like its indication, contraindication, materials and the procedure. Suturing is the term used in Modern science for Seevana. A suture is any thread which brings into opposition two surfaces or tissues.^[2] Suturing is a stich or series of stiches made to secure opposition of the edges of a surgical or traumatic wound. No surgery is complete without suturing. A lot of scope in developing suturing material told by Acharya Sushruta are on lines of modern medical science. Hence in this regard a small attempt has been made to through light on Seevana Karma and Suturing. This article summarises concept of Seevana Karma according to Acharya Sushruta.

Key words: Seevana, Ashtavidha Shastra Karma, Suture, Suturing

INTRODUCTION

Seevana Karma is Pradhana Karma and one among Ashtavidha Shastra Karma and one among Chaturvidha Raktasrava Nirodha Upayas.^[3] Suturing is term used in modern science. We get reference of Seevana Karma in Brihat Trayees like in Sushruta Samhita Sutra Sthana 5th and 25th chapter, *Charaka Samhita*, *Chikitsa Sthana*

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25th chapter, Ashtanga Sangraha 38th chapter. Acharya Sushruta had given detailed description of Seevana Karma including its indication, contraindication, material and its types, techniques of Seevana Karma. Suturing is the procedure of mechanical wound closure with the help of suturing material. The principle behind wound closure is to bring the wound edges together, prevent infection and promote rapid healing and provide support until wound healing is complete.

Seevana Karma

Joining of the bifurcated tissue with the help of Suchi and Sutra is called as Seevana Karma. Acharya Sushruta has given importance to the practical training for students who are well versed in Shastra (theoretical knowledge) to make him Yoqya (fit) before he starts his profession. This is well explained in Yogyasutreeya Adhyaya of Sutrastana of Sushruta Samhita like student after getting theoretical knowledge should be made Yogya (fit) by instructing the practical methods

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of *Snehadi* and *Chedyadi Karma* firstly on models and later on patients. *Seevana Karma* is initially practiced on *Sukshma Ghana Vastra* and *Mrudu Charma*.^[4]

Indication

Seevana Karma is indicated in the diseases (wounds) arising from fat such as tumours etc which are being cut or incised and scraped well, Sadyovrana (traumatic wound) and diseases localised on moveable joints require suturing.^[5] This implies that Acharya Sushruta was so practical at that itself as those indications mentioned are relatable even today.

Contraindication

Seevana Karma is contraindicated in diseases (wounds) caused by alkali, fire and poison, those which emit air (gas) from inside, those having blood and foreign body inside should not be sutured but these should be well purified and also sand, hairs etc bones which are present and moving inside the wound as these will cause suppuration and pus formation so these should be cleared and then sutured.^[6] This implies that Acharya Sushruta had given importance to the cleaning of the wound and asepsis.

Seevana Dravya

- 1. Seevana Sutra
- 2. Seevana Suchi

Seevana Sutra

Acharya Sushruta had mentioned various kinds of Seevana Sutras. These can be again classified into plant origin and animal origin as well as absorbable and non absorbable as like modern (Table 1) Seevana Sutra includes thin thread of bark of Ashmantaka, Shanaja Sutra, Kshouma Sutra, Snayu, Bala, fibre of Murva and Guduchi.^[7] Heads of giant ants are used to staple a wound over intestine while performing surgery for Chidrodara (intestinal perforation). The live ants are affixed to the edges of the wound, which clamp the edges by shutting with their pincers. Then Vaidya cut their bodies off, leaving the jaws in place which acts as suture.^[8] Seevana Sutra binds and holds the tissue together and acts as mechanical support till wound heals. Suture is any thread or strand which brings into opposition two surfaces or tissues.

Absorbable		Non-Absorbable	
Absorbable sutures are made of materials which are broken down in tissue after a given period of time.		Non - Absorbable sutures are made of materials which are not metabolized by the body, and are removed after a few weeks.	
Natural	Synthetic	Natura I	Synthetic
Catgut	Polyglactin 910 (Vicryl)	Silk	Polyamide
Fascia lata	Polyglycolic acid (PGA)	Cotton	Polyester
Kangaro o tendon	Polydioxanon e suture (PDS)	Linen	Polypropylen e
Beef tendon			Polybutester

Ideal suture material

- 1. Freely available and less expensive
- 2. Should not promote growth of bacteria around it
- 3. It should have uniform diameter
- 4. Non allergic, non-carcinogenic
- 5. Adequate tensile strength
- 6. Minimum tissue reaction, easy to handle and to sterilise

Seevana Suchi^[9]

There are twenty types of *Shastras* and *Suchi* one among them. *Suchi* is sharp instrument which pierces the tissues and aids in suturing. *Acharya Sushruta* had mentioned three types of *Suchis*. They are as follows -

A. *Vritta Suchi* - two *Angula*, used for suturing over places which have less muscles and over joints

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- B. *Tryasra Suchi* three *Angula*, used for suturing in places which are broad and with more muscles
- C. *Dhanurvakra Suchi* used over vital points, scrotum and abdomen

Even *Suchis* mentioned in those days are relatable to present day traumatic and atraumatic needles.

Suchi	Needle	
Vritta	Round body	
Tryasra	Cutting body	
Dhanurvakra	Reverse cutting body	

Qualities of Suchi

Suchi should have sharp point, manufactured nicely that ideal in their size and shape and their hind tip resembling the stalk of *Malati* flower.

Ideal Needle

- 1. Made up of high-quality stainless steel
- 2. Thin and slim as possible without compromising strength
- 3. Should cause minimal trauma to tissue
- 4. Should able to penetrate tissue with minimal resistance
- 5. Should resists bending

Procedure of Seevana Karma^[10]

Seevana Karma is one among the Ashtavidha Shastra Karma and one among the Chaturvidha Raktasrava Nirodha Upayas. Acharya Sushruta had mentioned Seevana Karma systematically which starts with Poorva Karma and ends with Pashchat Karma.

Poorvakarma

If wound is contaminated with *Pamshu* (sand), *Roma* (hair), *Nakha* (nail) these should be removed and wound should be cleaned and wound edges are elevated and placed in usual position.

Pradhanakarma

After proper cleaning the *Seevana Karma* is carried out with the help of *Seevana Suchi* and *Seevana Sutra*. And there are four patterns of *Seevana Karma*.

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Seevana Prakara

- 1. *Vellitaka*: Suturing resembling the creeper and this is achieved by suturing continuously along the length of the wound rapping the wound edges inside it and knotting at the last.
- 2. *Gophanika*: The *Vrana* which are shaped as foot of crow or wide and this is achieved by suturing continuously and passing the needle through loop of each stitch.
- 3. *Tunnasevani*: This resembles the subcuticular suture and done as like torn garments are sutured and is advisable in *Vrana* over eyelid.
- 4. *Rujugranthi*: achieved by suturing and placing the knots straight and keeping some distance between each stitch.

Pashchatkarma

After suturing has been done properly, the wound should be sprinkled with the powders *Priyangu*, *Anjana*, *Yashti*, *Rodhra*, fruit of *Shallaki* and covered with *Pichu* and bandaged appropriately and advised to follow *Pathyaapathya*.

Seevana	Suturing	
Vellitaka	Continuous	
Gophanika	Blanket	
Tunnasevani	Subcuticular	
Rugugranthi	Interrupted	

Principles of Wound Suturing^[11]

- Primary suturing should not be done if there is oedema / infection / devitalised tissues / haematoma
- Always associated injuries to deeper structures like vessels / nerves or tendons should be looked for before closure of the wound
- Wound should be widened by extending the incision whenever needed to have proper evaluation of the deeper structures

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- Proper cleaning, asepsis, wound excision / debridement
- 5. Untidy wound should be made tidy and clean before suturing
- 6. Proper aseptic precautions should be undertaken
- 7. Sutured wound should be inspected in 48 hours
- 8. Sutures are removed after 7 days

DISCUSSION

Seevana is one among the Ashtavidha Shastrakarma. The concept of Seevana Karma mentioned by Acharya Sushruta in Sutrastana 25th chapter i.e., Ashtavidha Shastra Karma Vidhi Adhyaya is very relatable to today's practice of suturing. Starting from the material used like absorbable and non-absorbable sutures, needle types traumatic and atraumatic needles, indications, contraindications, techniques for suturing are practiced even today. Though there are some modifications in these but the basic principles behind remains the same.

CONCLUSION

Seevana Karma is one among the detailed contribution of Acharya Sushruta. Yet there are so many relatabilities between those days practice to now a days practice there are emergence some modifications as per the need. Going back to era of Sushruta and making use of those techniques and evolving its significance is the need for today's research. One such research is to test efficacy of suture materials like fibres of Murva, Guduchi, Shana, Ashmantaka, Kshouma Sutra, Snayu, Bala etc. and bring them to market as Herbal Suture material which can be cost effective and ecofriendly.

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