

**CONCEPT OF SHUSHURUTOKT SIVAN KARMA IN THE
MANAGEMENT OF WOUND- A LITERATURE REVIEW*****Dr. Rahul Shukla, **Dr. Suman Yadav and ***Dr. Ashutosh Kumar Yadav**

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ABSTRACT

In our surgical practice suturing (*Sivan karma*) is very important procedure and it is equally important procedure in both traumatic wound (emergency surgery) as well as in the elective surgery. Wounds are commonest problem faced by surgeon. Good approximation of wound margin with good healing is the main aim of suturing. *Sivan karma* is one of the main procedures in *Ashtavidh Shastrakarma* which means suturing as described by Acharya Sushruta in his book *Sushrut Samhita*.^[1] Acharya Sushruta has also described 60 types of *chikitsa upakrama* called '*Shashti upakrama*' for wound management.^[2] For practicing these *Ashtavidh Shastrakarma*, Sushruta has described different techniques under the heading of '*Yogya Vidhi*' Adhyaya of *sutrasthan*.^[3] For the purpose of proper wound healing good surgical

practice should be applied and for proper suturing one should practice it with ideal techniques. It gives better result for wound healing. If suturing is done in proper way it avoids extra time and efforts for wound healing. This article is written to highlight the suturing techniques in the management of wound. Literature review was done to study the suturing techniques accelerating wound healing and role of *Sivan karma* in the of wound management. Sutures are typically used to close all type of wounds, whether they are on surface level or deep. In order to close a profound wound, the surgeon may be required to stitch two edges of the skin together layer by layer, which would involve placing and leaving sutures underneath

the skin. There are some risks involved with all medical procedures involving stitches. There is always some chance that there will be permanent scarring from the sutures. A bulging scar (keloid) can occur after stitching, which will cause the area making it less flexible than surrounding skin and causing discomfort. So, proper suturing techniques are required for proper wound management.

KEYWORDS: *Sevana karma, Ashtavidh Shastrakarma, Shashti upakrama, Yogya Vidhi.*

INTRODUCTION

Ayurveda is the most ancient medical science of this world. It has antiquity goes back to the 'Vedas.' Ayurveda is *aupang* of "Atharva Veda".^[4] Ancient Indian Surgery was a highly skilled branch of Ayurvedic medicine and known as *Shalya Tantra*. Eight types of surgical procedures described as "*Ashtavidha Shastra karma*" are means and methods to treat the surgical diseases at that time. *Ashtavidha Shastra karma* included *Chedana* (Excision), *Bhedana* (Incision), *Lekhana* (Scraping), *Vedhana* (Puncture), *Eshana* (Probing), *Aaharana* (Extraction), *Vishravana* (Drainage) and *Sivana* (Suturing).^[5] Commonly suturing is the last surgical procedure which makes that particular surgery successful if done perfectly otherwise complete procedure will be ruined. *Sivana karma* (suturing) as described by *Acharya Sushruta* in very detail in his *samhita* is not a new technique but is a known procedure since ancient era. This is the branch basically evolved for the purpose of wound healing and its management. *Sivana Karma* i.e., suturing is one of the prime surgical procedures and has got great importance as the success of surgery depends on careful apposition of tissues and wound healing. *Sushruta* the great Indian Surgeon who had given a complete account on wound healing and various techniques of wound healing used for various types of wounds. *Sushruta* defined the suturing procedure as a process of tying two ends of thread for union of wound edges and is done with the help of needle and appropriate suturing material. The purpose of *Sivana Karma* is to approximate the wound edges for proper and faster healing i.e. *Vrana Sandhan*.^[6] *Sandhan* means to unite, to heal. Aim is to unite, repair and support the injured tissue until healing is completed. This will achieve complete haemostasis and normal restoration of tissue function. With advancement of time, science is expanding its wings in every field, but basic principles remain always unchanged. That's why modern surgery also follows all those ancient surgical principles. *Acharya Sushruta* had described in details about how to perform suturing in a proper way avoiding complications. This review article is based

on suturing principle laid by *Acharya Sushruta* in concern to *Vrana Sandhan Karma* i.e. management of wound and wound healing.

AIMS AND OBJECTIVE

1. To review the literature of *sivan karma* as mentioned in *Sushrut Samhita*.
2. To explore the importance of *sivan karma* in the management of wound healing.

MATERIAL AND METHODS

The all reference of *Sivana Karma* are collected and compiled from *Sushruta samhita* a Ayurvedic classics written by *Acharya Sushruta*. The various methods are discussed with their importance in enhancing wound mangement.

OBSERVATIONS

Sivana Karma described in detail in various classical literature of Ayurveda especially in *Brihatrye*. *Acharya Sushruta* advocated *Sivana Karma* in the *Asthvidha Shastra Karma* for the management of surgical disease and described in detail in *Asthvidhshashtrakarmiyam adhyayay of sutrasthan*.^[7] In this chapter he described all the aspects of suturing regarding managements of wound. As we all know *Sushruta* is the father of surgery so we accept the principles laid by *Acharya Sushruta* for wound management. He described all the aspects regarding *Sivan Karma* like preparation of wound for suturing, methods of suturing, required material used in wound closure, indications, contraindication, benefits of suturing and complication of incorrect suturing etc. Preparation of wound closure before suturing, it should be cleaned thoroughly all around. The devitalized tissue or any foreign material like dirt, dust, hair, sequestrations of bones, clotted blood all need to be removed from the wound. This will reduce the chances of sepsis. Then the detached parts of tissues, fractured bones are placed in their normal position. Achievement of complete haemostasis is confirmed and wound is stitched with suture material inserted in a needle. The most important steps in the prevention of infection in a traumatic wound involve preparation, irrigation and debridement. The importance of meticulous wound care cannot be overemphasized. All devitalized tissue needs to be removed so that possibility of infection is markedly reduced. The process of wound infection and its disadvantages were not unknown to ancients. *Sushruta* has clarified that blood clots, foreign materials like stones, hair, nails, fragment of fractured bone etc should be removed and wound should be thoroughly cleaned and then apply suture. If these materials are not removed, the wound will proceed to *Pakavastha* i.e. suppuration and will increase pain over affected part.^[8]

Methods of Wound Closure (*Sivana Karma*)

Four methods of suturing techniques are described in *Sushruta Samhita* and other ancient Ayurvedic texts as *Sivana Karma*.^[9]

Vellitaka - Continuous type. This is achieved by suturing continuously along the length of the wound rapping the wound edges inside it.

Gophanika - Interlocking or blanket type suturing. The wounds which are shaped as footprints of crow, they are sutured with *Gophanika* type of suturing.

Tunnasevani - Zigzag type or subcuticular. It is done as like as the torn-up garments are sutured.

Riju granthi - Straight and interrupted type. This type of suturing thread is inserted from two edges of wound and knot is tied. This is interrupted type of suturing.

Materials used in suturing

As we know, *Sushruta Samhita* is one of the ancient Indian surgical texts which includes detail description about different types of suture materials both vegetative and animal origin which are either absorbable or non-absorbable. *Sushruta* had worked with many natural materials like fine threads, flax of *Ashmantak* (*Bauhinia vahlii*), *Guduchi Pratan* (*Tinospora cordifolia*), *Trinaushadhi* like *Shanaj* (a type of grass), Cotton threads, Silk threads, hairs of horse and Snayu (tendons/ligaments).^[10] He had used the Heads of Giant Ants to effectively staple a wound over intestine while performing surgery for perforations. The live creatures were affixed to the edges of the wound, which they clamped shut with their pincers. Then the surgeon cut the insects bodies off, leaving the jaws in place.^[11]

Indication of wound closure

Brihatrayi were agreed on the fact that suturing should be resorted to the case of an open ulcer due to the action of the deranged fat after its vitiated contents has been fully scrapped out as well as in the case of an uncomplicated *Sadyo Vrana*. Importance is given to *Sadyo Vrana* and clearly mentioned that the wound should be sutured at the same day.^[12] *Dalhana* in his commentary on *Sushruta* has elaborated this principle as wounds overhead, forearm, face, ears, lips, nose, cheek, neck, upper extremities, abdomen, gluteal region, reproductive organs, penis, scrotum etc. are to be sutured immediately.

Contraindication of wound closure

Acharya Sushruta clearly mentioned that the wounds contaminated with dust, poisonous wounds, diabetic wounds, skin diseases, putrificated, gangrenous wounds, wounds from

which air is leaking, burns due to alkali (*Kshar*) or heat (*Agni*), infected wounds are not to be sutured. In case if the wound is contaminated, one should clear the wound then suture it in all possible aseptic precautions. The wounds containing any foreign body inside it like bony sequestrations in osteomyelitis or the wounds where complete haemostasis is not achieved i.e. fresh bleeding in the wounds, penetrating injuries where there is presence of internal haemorrhage or haematoma, in such conditions wound should be left open and should not undergo suturing procedure. *Dalhanacharya* comments that the wounds over the joints like knee, elbow etc where bones are fractured or dislocated and where much tissue is lost should not be sutured.^[13]

Benefits of Suturing

Acharya explained in various way that *Sivana* is an important karma among the *Asthavidha Shalya Karma* specially the wounds made during surgical procedure or appeared in traumatic injury. The suture approximates both edges of wound, prevent hemorrhage, prevent contamination to various infective organisms and facilitate improve healing and decrease scar formation that also decrease the pain to patients also.

Complication of incorrect suturing

Acharya Sushruta explain that if during suturing if bite is taken at very near of edge the margin may be tear and results in wound dehiscence and if the suture are taken very far from the margin there may be tension suture which cases very much pain at the operative site. So, the needle should be passed neither very far nor very near from the margins of wound.^[14]

DISCUSSION

Our *Acharyas* were very much aware about management of wounds. *Acharya Sushruta* described sixty *Upakramas* (procedures) for the treatments of wound. The *Sivana Karma* is an important procedure in *Shalya Karma*. As described the method of suturing are similar in modern day surgical practice are also same. Sutures neither only facilitates wound healing but also stop the bleeding which occurs during surgery. The ancients well knew the interference of blood in repair and regeneration of wounds. The *rakta* vitiated by *vata* causes dehiscence of wound, vitiated by *pitta* causes suppuration, vitiated by *kapha* causes itching of the wounds.^[15] Large amount of bleeding causes inflammation and ischemia hampers the wound healing. Blood is a uniting factor of wound edges, which is very important in wound healing. Keeping this very important factor in view, *Sushruta* had advised to confirm the circulation of the part before uniting. If there is poor perfusion and marked ischemia of the part then one

should scrap the wound margin and let the blood flow to improve and thereafter proceed for suturing. *Sushruta* had given prime importance to achieve haemostasis while performing any surgical intervention. For the purpose, the act of tying bleeding vessels i.e. ligation was well known also various other methods like *Sandhan* (union) with suturing the wound will stop bleeding by applying pressure effect over small vessels and oozes, *Skandana* (coagulation) with *kashayaushadhi* and cold application so that the cut edge of bleeding vessel will shrink and bleeding will stop, *Dahana* (cauterization) with *Agni* and *Pachana* (chemical cautery) by means of *bhasmas* (alkalis).^[16] *Acharya Sushruta* gives very much importance to wound closure to prevent secondary infection because open wounds are more prone to be infected. Infected wounds take more time in healing because suturing is contraindicated in the infected wound, in that particular condition we first drain the pus and debridement of unhealthy tissue and make a good environment for the healing. So, with the proper correct suturing save the wound to be infected and well approximation of edges provides small scar of surgery.

CONCLUSION

After studying the review, we can conclude that our ancients had very good sense of wound management. They gave similar importance to surgical as well as traumatic wound. They have very good idea of absorbable and non-absorbable suture. In modern day we follow the same principle for the closure of wound.

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