

## IMPORTANCE OF SIVAN KARMA YOGYA VIDHI REGARDING SUTURING TECHNIQUES IN SURGICAL PRACTICE

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### ABSTRACT

*Ayurveda* is science of healing. *Acharya Sushruta* has described different measures for wound healing. *Sushruta* has described 60 types of *chikitsa upakrama* called 'Shashtiupakrama' for wound management. In this *Upakrama Sushruta* also described eight types of operative procedure under the heading of 'Ashtavidha Shastrakarma'. Sivan karma is one of the main procedures in *Ashtavidh Shastrakarma* which means suturing. For practicing these *Ashtavidh Shastrakarma Sushruta* has described different techniques under the heading of 'Yogya Vidhi' *Adhyaya*. 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 done in proper way it avoids extra time and efforts for wound healing. This article was written to highlight the suturing techniques in healing of wound. Literature review was done to study the suturing techniques accelerating wound healing and role of *Sivan karma yogya vidhi* in wound healing. Sutures are typically used to close all type of wounds, whether they are 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 the need of the era.

**KEYWORDS:** Suturing techniques, *Sivan Karma*, *Yogya Vidhi*.

## INTRODUCTION

*Ayurveda* is science of healing. Healing by any mean is to cure disturbed structures. In wound healing we can help the wound to heal fast, as wound healing is natural phenomenon. The practice of suturing techniques is one of the oldest techniques used for correct healing. Many people overlooked its proper practice because it seems like simple and common procedure. Proper suturing is very important for practice and for the healthy recovery of patients. Sutures are used to close wounds most commonly because suture material provides mechanical support necessary to sustain closure.<sup>[1]</sup>

*Acharya Sushruta* and *Acharya Vagbhaat* have told importance of suturing techniques and how to practice it properly. Simulation modeling solves real-world problems safely and efficiently. It provides an important method of analysis which is easily verified, communicated, and understood. Simulation modeling provides valuable solutions by giving clear insights into complex system.<sup>[2]</sup> *Acharya Sushruta* have stated to give efficiency in surgical operations, the pupils were asked to try their knives repeatedly first on natural and artificial objects resembling the diseased parts of the body before undertaking an actual operation.<sup>[3]</sup>

Surgical training has undergone many changes during several years. There are several techniques of simulation are available like artificial tissues, animal models and virtual reality computer simulation. Simulation means a model of a real activity, created for training purposes or to solve a problem. Simulation helps one to train in surgical skills outside the operation theatre.

### Aim

To highlight the suturing techniques in healing of wound.

### Objectives

- Literature review to study the suturing techniques accelerating wound healing.
- To study role of *Sivan karma yogya vidhi* in wound healing.

### Importance of proper suturing techniques<sup>[4]</sup>

1- Minimize risk of infection- Suturing technique and materials will determine, whether patient experiences post surgical wound infection, but there are many other factors will depend on the patient. For example, suturing an elderly or obese patient requires extra

care because the tone and elasticity could impair circulation and proper approximation of the skin.

- 2- Different stitching techniques for different wounds- Not all wounds are similar, so the techniques used for suturing are not similar. If the wound is mostly superficial with very little tension then interrupted suture is the popular and simple procedure. If the wound is deeper with several layers of skin and higher tension, the process becomes more complex.
- 3- Reduce scarring- Scar's appearance depends more upon the layers below the surface than surface itself. There are certain techniques that properly close the deep tissue layers will reduce tension on the skin overall, leaving less open space beneath the surface that needs to be rebuilt with scar tissue. This will help to provide a clean, minimal appearance for surface scarring.

Understanding the importance of proper suturing techniques will leave patients with sutures that heal properly, reduce infection, and look as clean as possible.

### **Principles of wound suturing<sup>[5]</sup>**

- Primary suturing should not be done if there is edema, infection, devitalized tissues or 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- proper exploration.
- Proper cleaning, asepsis, wound excision or debridement
- Any foreign body in the wound should be removed
- Skin closure if it is possible without tension
- Skin cover by graft or flap- immediate or delayed
- Untidy wound should be made tidy and clean before suturing
- Proper aseptic precautions should be undertaken
- Antibiotics , analgesics are needed
- Suture wound should be inspected in 48 hours
- Sutures are removed after 7 days.

### **Indication of suturing in Ayurveda<sup>[6]</sup>**

*Acharya Vagbhata* has stated that which kind of wound should be sutured in '*Sastrakarma Vidhi*' *adhyaya* of *Sutrasthana*. In which he stated that traumatic wounds which are recent

and wide should be sutured immediately, also the ulcers which are made by scraping fatty tumors, pinna of the ear which are thin, ulcers located on the head, eye sockets, nose, lips, cheeks, ears, arms, neck, forehead, scrotum, buttocks, penis, rectum, abdomen etc. which are situated on important fleshy and immovable parts should be sutured.

### **Contraindication of suturing<sup>[7]</sup>**

*Acharya Vagbhata* also stated which kind of wound should not be sutured. The wound which are on the groins, axilla etc. which are less muscular and movable, ulcers which emit air, which have foreign body inside, which are produced by alkalis, poisons and fire should not be sutured.

### **Suturing technique in *Ayurveda*<sup>[8]</sup>**

Suturing should be done after removing loose pieces of bones, dried blood clots, grass, hairs etc, by placing the torn and hanging piece of muscles in their proper places, keeping the joints of bones and bones fractured in their normal positions and after the stoppage of bleeding; by making use of tendons of animals, threads of cotton, silk, flax etc or inner fibers of bark of trees. Sutures being done neither very far nor very close, holding neither very much nor very little.

### ***Yogya vidhi*<sup>[9]</sup>**

*Acharya Sushruta* has described practical importance of surgical techniques in *Yogya Sutriya Adhyaya*. The preceptor should his disciple attends the practice of surgery even if he has already thoroughly mastered the several branches of the science of medicine or perused it in its entirety. In this *Adhyaya Acharya Sushruta* has told how to practice *Ashtavidha Shastrakarma* on different simulation objects. *Sushruta* has told practice suturing on pieces of cloth, skin. An intelligent physician who has tried his prentice hand in surgery on such articles of experiment as gourd etc or similar to the parts or members of human body they are usually applied to, will never lose his presence of mind in his professional practice.

### **Types of suturing techniques in *Ayurveda*<sup>[10]</sup>**

- 1- *Vellitak*- It means continuous suture. After having pressed the ulcer up into its proper position, it should be sutured with string of thin cotton thread of the fibers of the *Ashmantaka* tree or hemp plants or of *Atasi*, *Murva* or *Guduchi* or with strips of leather, plaited horse hair or animal sinews.
- 2- *Gophaanika* – It means reinforcing sutures.

- 3- *Tunnasevani* – It means draining sutures.
- 4- *Rujugranthi* – It means interrupted sutures.

As suited to the shape and position of the ulcerated part the above suture techniques can be used.

### **Types of suturing techniques in modern science<sup>[11]</sup>**

- 1- Simple interrupted suture- this is the most common suture employed for closure of lacerations. A fine smooth non absorbable suture is used for this purpose because it causes much less tissue reaction than silk.
- 2- Vertical mattress suture- this suture is commonly used for closing surgical wounds. It is useful if there is excess skin or loose subcutaneous fat.
- 3- Horizontal mattress suture- This is another eversion suture, and may be used where the skin is thick, e.g. on the sole of the foot.
- 4- Subcuticular suture- This suture gives a very fine and neat scar because approximation of skin margins should be perfect. Either absorbable or non absorbable suture can be used for this technique. For absorbable sutures, the ends are secured by means of a buried knot. For non absorbable sutures, the ends are secured by means of beads or a knot outside.

### **Types of suturing regarding wound duration<sup>[12]</sup>**

- Primary suturing-It means suturing the wound immediately within 6 hours. It is done in clean incised wound.
- Delayed primary suturing- It means suturing the wound in 48 hours to 10 days. It is done in lacerated wounds. This time is taken for the oedema to subside.
- Secondary suturing- It means suturing the wound in 10-14 days or later. It is done in infected wounds. After the control of infection, once healthy granulation tissue appears, secondary suturing is done.

### **Precautions in suturing<sup>[13]</sup>**

Regardless of the closure technique being used, precautions must be considered to avoid wound breakdown and to achieve a well-healed incision with minimal scarring.

- Ensure skin incision is located along the intrinsic tension lines for minimal scarring.
- Maintain good blood supply to the wound
- Avoid over tightening the stitches to reduce the tension and prevent any wound breakdown or unwanted scars.

- Eversion of skin edges for best healing with minimal scarring
- Usage of steri-strips, Band-Aids and skin adhesive materials to strengthen incision during and after suture removal.

## DISCUSSION

According to *Acharya Sushruta* an intelligent physician who has tried his prentice hand in surgery on such articles of experiment as gourd etc or similar to the parts or members of human body they are usually applied to, will never lose his presence of mind in his professional practice. This way he tried to explain importance of simulation(Yogy) surgical practice.

According to modern science Simulation modeling solves real-world problems safely and efficiently. It provides an important method of surgical practice. Simulation modeling provides valuable solutions by giving clear insights into complex system.

*Yogy vidhi* has its own important in practicing surgical techniques, modern simulation is nothing but the advancement in *Sushruta's Yogy Vidhi*.

## CONCLUSION

Good suturing techniques are required for proper wound healing. If one practice good suturing techniques and simulation, it will help to patient's wound proper healing. Since ancient time the role of suturing techniques in wound healing is still well known due to its advancement according from time to time. A surgeon skilled in the art of using surgical instruments is always successful in its professional practice, and hence the practice of surgical techniques should be commenced at the very outset of medical studies. 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 done in proper way it avoids extra time and efforts for wound healing.

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