



CLOSURE OF A FASCIOTOMY WOUND WITH TABLE TIE: A SIMPLE AND LESS EXPENSIVE METHOD

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ABSTRACT **Background:** A 41 years old male k/c/o diabetic foot with below knee amputation stump of left lower limb had come to emergency with necrotizing fasciitis of the thigh of same limb for which fasciotomy was done. After a few days with a series of VAC dressing and sterile dressings, the wound showed healthy granulation at the floor over the muscle. However, due to skin edema and retraction of the skin edges and multiple cultures not showing environment favorable for SSG; wound was closed with sterile table tie. **Method:** Wound was closed with Table tie sterilized with 2% Gluteraldehyde which was gradually tightened over a frequency of 2-3 clicks every 48 hrs. **Result:** Complete wound contracture and finally wound closure. **Conclusion:** Closure of a fasciotomy wound with table tie is very a simple and less expensive method and an excellent alternative to SSG.

KEYWORDS : Fasciotomy, Table Tie, SSG, Wound Closure, Dermal apposition Technique

INTRODUCTION:

A successful wound closure is a closure without the need for skin grafting, amputation or death. Necrotizing fasciitis in a case of diabetic foot often leads to Compartment syndrome, which is a common and severe medical condition that can lead to ischemia and ultimately tissue loss¹. The treatment of choice is emergent fasciotomy to lower the compartment pressure. However, closing fasciotomy wound often presents a problem because of edema and skin retraction. As a result, numerous techniques are advised to optimize wound closure. Here we use Table Tie to close the wound of Fasciotomy gradually without causing much tension to the skin.

AIM:

To perform fasciotomy wound closure with Table Tie, which is a type of dermal apposition technique for gradual primary closure of fasciotomy wound.

MATERIALS AND METHODS:

Here, wound closure techniques exploit the inherent viscoelastic and biomechanical properties of the skin. A 41 years old male k/c/o diabetic foot with below knee amputation stump of left lower limb had come to emergency with necrotizing fasciitis of the thigh of same limb for which fasciotomy was done (Fig 1). After a few days with a series of VAC dressing and sterile dressings, the wound showed healthy granulation at the floor over the muscle. However, due to skin edema and retraction of the skin edges and multiple cultures not showing environment favorable for SSG; wound was closed with sterile table tie. Initially the Dimensions of the wound were 35 cm x 20 cm considering the highest length and breadth respectively.



Fig 1- showing below knee amputated stump of left lower limb with necrotizing fasciitis of the thigh of same limb and skin edema and retraction of the skin edges with dimensions of the wound were 35 cm x 20 cm.

Table Tie which were sterilized by immersing them in 2% Gluteraldehyde solution were applied on both the edges of the wound approximately 1-1.5 cm away from the margin and approximately 2 to 3 cm away from each other by taking serial stab incisions over the

skin (Fig 2). Care was taken to keep the smooth part of the table tie towards the floor and serrated part facing us to avoid trauma to the ulcer and pain to the patient. The table ties were tightened gradually over a frequency of 2-3 clicks every 48 hrs (Fig 3).



Fig 2- showing First closure - Table Tie which sterilized by immersing them in 2% Gluteraldehyde solution were applied on both the edges of the wound, 1 – 1.5 cm away from the margin and 2 to 3 cm away from each other by taking serial stab incisions over the skin.



Fig 3- showing second closure- Table Tie -The table ties gradually tightened over a frequency of 2-3 clicks every 48hrs.

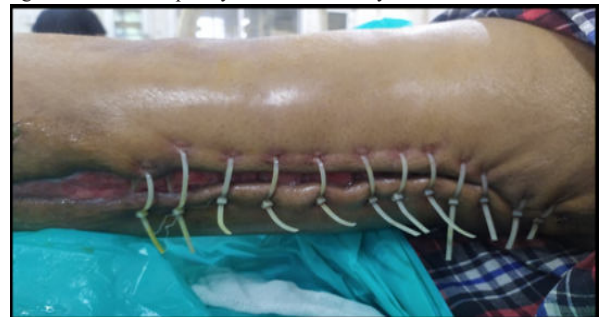


Fig 4- showing last closure- Table Tie – The table ties gradually tightened over a frequency of 2-3 clicks every 48hrs.

RESULT:

Gradual tightening of the Table tie lead to much less tension on the skin and it is being an almost painless procedure. The patient also accepted it very well. There was no ischemia of the skin edges or the surrounding skin. Thus, its need three times closure to complete wound contracture and finally wound closure achieved with simple and less expensive procedure.

DISCUSSION

Surgeons used various techniques for closure of wound and various materials for tie or suturing. The simple shoelace technique used by Kakagia D¹, is a safe and less expensive method to bring the skin margins together. After the use of stapler for wound closure by Sawant MR² stated that staple detachment, interference with tightening or limb mobilization; and need of checking and replacing where necessary is critical step during procedure. With the aim of improvement in the technique and elimination of its weaknesses, several modifications adopted by surgeon in the original technique. Use of silicon sheet, paper clips, nylon sutures, application of Ty-Raps, fine subcuticular Kirschner wires and "near-near-far-far" stitch technique was done by surgeon with some advantages, strength to close, some defects and few disadvantages^{3,8}.

In general, suture approximation techniques are widely popular in the management of fasciotomy wounds. For good to excellent outcomes, with high wound closure rates, use of inexpensive and easily accessible materials that are available in healthcare facilities with limited resources, ease of application and the suture tightening, safe performance even in an outpatient setting is important and innovative. Wound closure with suture approximation is expected to occur within 5 days to 3 weeks. Complications such as ischemia or increase of compartmental pressures, though rare, may occur; therefore, continuous evaluation of the wound is recommended^{4,6}.

CONCLUSION:

In general, use of Table tie for fasciotomy wound closure following compartment syndrome does not require additional equipment or training. Table tie for fasciotomy wound closure can be performed with available material in any operating room, it. The most important thing is to take care of aseptic precautions throughout the closure procedure. This procedure takes less time for closure and reduces need for nursing care and hospital stay. It does not require second procedure for closure that decreases the need for skin grafts. After this procedure, acceptable aesthetic result is achieved with associated morbidity and skin closure. This procedure is less expensive so resulting in lower health care cost. At the same time allows easy access to the wound for inspection and toilet with maximum patient comfort and tolerance. This close monitoring of the limb during closure is helpful in early detection of complications like recurrence of compartment syndrome, skin necrosis due to constant tension, deep muscle damage and necrosis that could have occurred.

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