



RESEARCH ARTICLE

LARGE PERIANAL ABSCESS TREATED BY VACUUM ASSISTED CLOSURE

<sup>1,\*</sup>Ananda Rama Rao, B. and <sup>2</sup>Nikhil, V.

<sup>1</sup>Prof of Surgery; SVS Medical College, Mahabub Nagar TS 500902

<sup>2</sup>Resident in Surgery, SVS Medical College, Mahabub Nagar Telangana 500902

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ABSTRACT

Vacuum-assisted closure (VAC) therapy is a new modality in wound care after growth factors and hydrocolloid dressing, in the treatment of large infected wounds. We have been using this technique for diabetic foot ulcers. A 58yr old diabetic man who is a post CABG pt, presented with a large horse shoe shaped peri anal abscess after drainage of the abscess in the O.R., a diversion colostomy was done and VAC therapy was applied, a complete closure of the peri anal wound by secondary suturing was achieved in 6 weeks. Avoiding regular dressing and constant soiling of the wound, which is a hindrance in the management of large infected wounds.

INTRODUCTION

Perianal abscess is an abscess adjacent to the anus. It arises from an infection at one of the anal sinuses which leads to inflammation and abscess formation. The unpredictable nature of healing response of an individual patient is influenced by many factors (local and systemic): bacterial load and infection; edema; pressure; moisture; chronic medical conditions or comorbidities such as anemia, diabetes mellitus, and renal or hepatic dysfunction; tissue oxygenation; and nutritional status. This causes the failure of any single therapeutic option and thus requires a multimodality approach. Normal healing is a linear multistep process that progresses from hemostasis through inflammation, granulation tissue formation, and re-epithelialization, to scar formation. Vacuum-assisted closure (VAC) therapy produces a closed wound healing, removes infective exudate, promotes perfusion, decreases edema and removes chronic inflammatory cells from the wound environment by applying topical negative pressure (Ngo *et al.*, 2011; Bassetto *et al.*, 2012). Vacuum Assisted Closure (VAC) not only stimulates blood flow to the wound bed (Moues, 2010), but also uniform negative pressure creates tissue deformation and cell stretching, leading to metabolic activity, fibroblast migration, and cell proliferation (Philbeck *et al.*, 2001).

**Case Report:** A 58 Yr old man who has undergone CABG for TVD, with Type 2 DM. Presented to the O.P.D. with a huge peri-anal abscess which was house shoe shaped covering 2/3rd of the anal circumferences. Pt was shifted to the O.R. and drainage of the abscess cavity was done under spinal anesthesia. After debridement of the abscess cavity (fig 1), anus was closed and a diversion sigmoid colostomy was planned, to prevent soiling of the peri anal wound, if the natural route of the faces was patent. The peri anal wound was managed by planting a VAC device therapy (fig 2), a full closure of the perianal wound by secondary suturing was attained in 6 weeks, by following VAC cycles (Table no.1). Each cycle consists of 4 dressings, on the 4th, 7th, 10th and 13th day of application of VAC, with bacterial culture and sensitivity of the wound bed taken on every dressing day.

Procedure for dressing change involved

- Careful removal of the old dressing. If adhered to wound base, moisten old foam with normal saline.
- Cleanse wound bed with normal saline or wound cleanser to remove debris. Remove from wound bed any bits of old foam dressing using cotton-tip applicator.
- Check condition of peri anal wound skin. Make sure wound edges are clean and dry.
- Prep wound margins around wound with skin protectant.

\*Corresponding author: Ananda Rama Rao, B.,  
Prof of Surgery; SVS Medical College, Mahabub Nagar TS 500902.  
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**Fig. 1. Perianal abscess**



**Fig. 2. Vacuum applied**

**Table no.1**

Action	Day
VAC application	1st day
1st Dressing change	4th day
2nd Dressing change	7th day
3rd Dressing change	10th day
4th Dressing change	13th day

- Cut and shape the foam to fit the size and shape of the wound
- Place shaped foam into wound.
- Fill wound with enough foam so that when vacuum is applied, the height of the foam is close to the top of the wound margins.
- Note number of foam pieces placed in wound. This is critical if foam is inserted into cavity
- Cut and apply transparent drape material to cover the foam and wound.
- Connect the suction device to the wound with a fenestrated tube.

- Activate VAC suction unit and check for airleak.
- The exudate is collected in the canister which is emptied on subsequent dressing day.
- The patient had his colostomy stoma inspected and the peristomal skin was protected.

## DISCUSSION

Vacuum dressings involve the application of a controlled negative pressure on the wound bed to accelerate the process of wound healing. The method was invented in Germany in 1987 and standardized, patented, and published in the United States in 1997 (Fleischmann *et al.*, 1995; Morykwas *et al.*, 1997). Since then its benefits have been widely evidenced in medical practice, especially in plastic surgery (Argenta, *et al.*, 2006; Suissa *et al.*, 2011).

The advanced technology associated with vacuum dressings makes these devices too complex for routine use, which dramatically reduces their use in developing countries like INDIA, because the training is not available to clinicians to enable them to treat patients with the vacuum-assisted closure devices, and the lack of resources makes the device itself unavailable (Philbeck *et al.*, 2001; Baynham *et al.*, 1999). However, less sophisticated yet excellent vacuum dressings without the use of the latest software technologies have been developed. Although numerous papers have been published on VAC therapy, which suggest the technique may have an important role to play in the management of many chronic, infective large wounds. Due to the expensive equipment of the VAC system, this has not been an attractive option for most surgeons. General indications for VAC therapy include chronic wounds, acute wounds, traumatic wounds, partial-thickness burns, dehisced wounds, diabetic ulcers, pressure ulcers, flaps, and grafts especially where increased amount of fluid exudate is expected. The main contraindications for use of VAC include malignancy in the wound, untreated osteomyelitis, no enteric or unexplored fistulas, necrotic tissue with eschar present in the wound, and placement over exposed blood vessels or organs. In the treatment of a large perianal wounds is known to be costly, VAC therapy has proven to be cost effective when compared with saline-moistened gauze. In a study conducted by Philbeck *et al.* (2001) estimated the average annual cost for treating each of 100 diabetic foot ulcers to be \$23,066 with and \$27,899 with saline-moistened gauze. Baynham *et al.* (1999) found that three-stage intravenous sacral and ischial wounds, which were refractory to surgical therapy for the past 10 months, got healed in about two months with VAC.

The device operated at negative pressure of 125 mmHg with five minutes on and two minutes off cycle. Marcus *et al.* (2013) presented a prospective study of randomizing 22 patients. Two groups of 11 patients each with pressure sores in the pelvic region were included. The time difference to heal was almost the same in the group treated with VAC (27 days) and the traditional group with Ringer's solution dressings thrice a day (28 days). However, no hospital stay, reduced costs, and improved comfort were noted in the VAC group. This new modality in the management of infective large wounds, is gaining tremendous results, with regular follow up with VAC cycles. Our patient had a complete closure through secondary suturing of the peri anal skin within Six weeks of VAC therapy (fig 3). Colostomy closure is planned after complete healing go the secondary sutures.

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