Vacuum assisted Closure in wound management – Poor man’s VAC©

M Singh, R Singh, S Singh, V Pandey, D Singh

Abstract

Vacuum assisted closure has reformed the plastic surgery practice and wound management in the last decade and has become an established method of wound management. The equipment though not inexpensive has become an essential part of all major plastic surgery departments in the western world. In ideal world VAC Dressing equipment should be available at hand at all times and to every patient in need, but the shortage of equipment in developed countries, or even unavailability in developing world is a common phenomenon. Most plastic surgeons would agree that they have at times delayed or postponed surgeries at some point in their career because of delay in procurement of VAC equipment. We describe a new method of wound VAC dressing application without using the standard VAC equipment from material readily available to any surgeon and present our experience of 7 cases where negative suction dressing was applied without use of standard equipment.

INTRODUCTION

The vac dressing and the equipment standardised by the KCI has provided a great tool in the complex field of wound management. The technique has been well advertised by the company’s marketing team and owing to the significant benefits and good clinical outcomes it has been well supported by various experts its versatility and efficacy is well documented in the medical literature.

Vacuum assisted closure has reformed the plastic surgery practice and wound management in the last decade and has become an established method of wound management. The equipment though expensive has become an essential part of all major plastic surgery departments in the western world.

In ideal world VAC Dressing equipment should be available at hand at all times and to every patient in need, but the shortage of equipment in developed countries, or even unavailability in developing world is a common phenomenon. Most plastic surgeons would agree that they have at times delayed or postponed surgeries at some point in their career because of delay in procurement of VAC equipment.

We describe a new method of wound VAC dressing application without using the standard VAC equipment, from material readily available to any surgeon.

OBJECTIVE

To evaluate alternate method of negative suction dressing application and its effectiveness.

METHODS

We applied negative suction sponge dressing to selected wounds which would have been difficult to manage by conventional dressings and where standard VAC equipment use was indicated.

MATERIALS NEEDED

1. Sponge foam (needs to be sterilised)
2. Romovac or similar 18 fr drain
3. Opsite or similar material
4. Gelonet / Bactigras / mepitel or similar dressing

METHOD OF DRESSING APPLICATION

The wound bed is debrided if dirty as in any standard
Vacuum assisted Closure in wound management – Poor man’s VAC©

dressing and sponge foam is cut to size / slightly larger than the wound (sponge is laid on wound bed blood gives a good imprint and can be used as an aid)

Interface dressing is applied using gelonet / bactigras / mepitel.

Sponge is then packed in the wound, suction tube of Romovac is laid on the sponge and sponge is sealed with Opsite. (Sometimes it is better to use the Trocar and take the suction tube out from the healthy wound after passing it through about two inches of healthy tissue in subcutaneous plane)

Air is sucked out using standard suction then tube is clamped.

Continuous suction is maintained using auto inflating Romovac system and

Nurses are instructed to clamp the suction tube compress and reattach the auto expanding cylinder of the Romovac when the cylinder is fully expanded.

Figure 2

Seven patients with complex wounds were treated with alternate vacuum suction dressing in our multi speciality hospital (Raj Nursing Home) between Nov 2007 and May 2008.

The dressing was applied 24 hours after surgical debridment of necrotic tissue.

The wound surroundings were inspected daily to check for any spreading cellultes without removing the opsite layer. Sponge changed at regular intervals to check progress of healing.

Interface dressing with Gelonet, Bactigras, or similar dressing was invariably used under the sponge to prevent sponge adhesion to wound.

Negative pressure was maintained using constant suction with romovac kit.

Figure 3

DISCUSSION

Local negative pressure dressing is an established method of wound management. Recent studies and publications have been limited to the highly sophisticated equipment marketed by the KCI. Unfortunately the cost of equipment is a great hurdle to its use in the developing world where the cost of treatment has to be borne by the patient and relatives and there is limited government funding or insurance cover.

We did have problems initially in planning phase but with few modifications in technique we were able to overcome the problem of leaks.

A – the drain was sandwiched in later cases between two sponge to avoid drain sitting directly under the opsite.

B – the area was cleaned and a tincture benzoin applied to surrounding areas before applying opsite. This enhances the stickiness of opsite.

C – the drain was tunneled through normal tissue rather than taking it out directly under opsite border.

The vac dressing has been used in a wide variety of cases.
and there is a consensus between vac users that the technique is definitely effective and the method has been used in management of acute and chronic wounds, open fractures, infected wounds, radiation ulcers, sternotomy wounds, degloving injury, abdominal wounds, skin graft, pressure sores.

All these studies have been on the standard vac equipment, and some authors have expressed their resentment over the cost of equipment and the fact that such important tool should be available more widely.

We describe a simple and effective method of vac dressing which should benefit the larger population where the standard equipment is not available.

The method described herein is a relatively crude one and our aim was to check its efficacy and its pros and cons. The end results were gratifying. We in no way claim that the method described here is better or worse than the system provided by KCI, the method obviously lacks standardisation or pressure regulation but it works pretty well!! And we recommend its use in situations where standard equipment is awaited or is simply not available.

References

Author Information

Makul Singh, MBBS, D. Orthopaedics, MS Orthopaedics
Raj Nursing Home

Rahul Singh, MBBS, MRCS
Lecturer, Department of Surgery, MLN Medical College

Shantanu Singh, MBBS, MS. FRCS
Raj Nursing Home

V.K. Pandey, M.B.B.S, MS.
Associate Professor, Department of Surgery, MLN Medical College

D.R. Singh, M.B.B.S, MS.
Professor, Department of Surgery, MLN Medical College