[EP204] TOPICAL NEGATIVE PRESSURE CHOOSING THE RIGHT DRESSING: DEVELOPING A PATHWAY TO SUPPORT CLINICAL PRACTICE

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: When applying Topical Negative Wound Pressure (TNWP) the right filler to meet patient need and stimulate optimum healing is required. Nurses often have difficulty selecting the correct dressing and refer to the tissue viability team. This project aims to devise a pathway to support clinical decision making, ensure nurses choose the right dressing and reduce tissue viability referrals.

Method:

- Audit of current practice and factors influencing dressing choice
- Review of patient experiences of TNWP changes

Results / Discussion: The manufacturers of TNWP devices supply foam or gauze wound fillers. Gauze dressings are more flexible and can be easily packed into irregular cavities, undermining wounds and sinuses, they do not adhere to the wound and can be removed easily. Foam dressings allow for rapid development of strong granulation tissue, however this can ingress into the foam causing adherence, and a liner, is needed to ensure patients do not experience pain. To ensure the right dressing is selected an audit of nurses understanding of TNWP dressing selection was carried out along with exploration of patient experience, including pain at dressing changes and wound size reduction. The results are allowing for the development of a TNWP dressing selection pathway to ensure the right product for the right wound. This will be evaluated to determine if it has improved clinical decision making and reduced referrals to the tissue viability team.

Conclusion: Devising a pathway for TNWP dressing choice can reduce tissue viability referrals whilst enhancing patient care.

[EP205] HOW TO ORGANIZE NPWT FOR OUTPATIENTS?

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: The main purpose of the abstract is to show the optimal system of patient's care with chronic wound, who are treated using negative pressure wound therapy (NPWT). NPWT is used for wounds of various etiologies in the outpatient setting.

Method: NPWT dressing has revolutionized our management of various, acute, chronic, and high output wounds. Since 01.02.2013 to 01.12.2014 we have applied 893 NPWT dressings (foam filler–748, gauze filler-53, single use NPWT-92), including compression therapy, total contact cast and skin grafts. At the moment we have 26 devices, most of which are being used all the time. During gradual process of expanding the base of devices used by us and increasing the number of patients we have get significant experience, which can be useful to organize Your Wound Care Clinics and enable to avoid mistakes we have made.

Results / Discussion: During 22 months of using NPWT outpatient system we have been able to create appropriate procedures.

- We consider as really important issues listed below:
- carrying out workshops for medical staff
- law analysis in loaning the device for outpatients
- techniques of application, which can reduce the number of device alarms
- patient training
- call center, which reacts on device alarm 24 hours
- fast service

Conclusion: NPWT therapy is useful in the treatment of many kinds of chronic wound. Hospital treatment simplifies the procedures for patients treated NPWT method but considering its costs and lack of reimbursement in many European countries, the access to this method is very limited. Using NPWT for outpatients significantly reduces the cost of curing. Such procedures require appropriate preparation of wound center administration and the treatment team.

[EP206] NEGATIVE PRESSURE THERAPY IMPROVES WOUND HEALING IN CIRCUNFERENTIAL THIGH LIFT INTERVENTION IN MASSIVE WEIGHT LOSS PATIENTS

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: Local complications of the surgical wound/evolving scar are potentially relevant problems in terms of doctors and patients satisfaction after surgical procedures in cosmetic surgery and body contouring after weight loss. The circumferential thigh lift (CTL) with vertical scar in postobese patients is a more extensive and effective procedure compared to the traditional lift, but the scar is not aequally concealed in the CTL. Therefore an unsightly scar may compromise the overall result and patient's satisfaction. Negative pressure tratment (NPT) is considered to have a beneficial effect on the physiological process of wound healing and early scar formation. A comparison study was therefore carried out in order to evaluate the effect of NPT on scar quality.

Method: All postobese patients consecutively treated for thigh laxity in the period January 2012 to April 2013 by the plastic surgeons of the All Medical Services were recruited with their informed consent in a prospective cohort study. All patients underwent CTL, but two different postoperative treatments were administered. In group A, consisting of the most recently treated patients (December 2012-April 2013), NPT was applied on the sutured wound in the immediate postoperative phase for a period of one week. Group A was compared with a parallel cohort of patients (Group B) who were treated with traditional dressings (previous preiod January 2012-November 2012). Demographic data, comorbidities and surgical complications were recorded. The quality of scars was evaluated by means of the Stony Brook Scar Evaluation Scale (SBSES) at 7, 15 and 30 days postoperative.
Data were statistically analyzed through a chi squared test, in order to explore any statistical significance between the quality of the scar and the type of postoperative wound treatment.

Results / Discussion: 43 patients were included in the period defined. The average age was 41, with a minimum of 24 and a maximum of 65. Group A consisted of 25 patients, group B included 18 patients. Smokers were 28% in group A and 39% in Group B. The mean duration of the procedure was 144 minutes, with a minimum of 120 and a maximum of 180. The mean duration of the hospitalization was 2.4 days, with a maximum of 3 and a minimum of 2 days. The frequency of wound dehiscence was 22% in group B, 20% in group A. Seroma occurred in 28% of group B patients and 20% of group A. The frequency of haematoma was 17% in group B, 4% in group A.

In the group treated with NPT, the mean SBSES score was 4.4 at 7 days, 4 at 15 days and 4.6 at 30 days. In the group not treated with NPT the SBSES score was 3.2 at 7 days, 3 at 15 days and 2.8 at 30 days.
By means of a chi squared test, at all postoperative stages the quality of the scar was showed to be significantly improved by the use of NPT ($p<0.05$).

Conclusion: NPT is a useful adjunct to the postoperative wound healing after circumferential thigh lift in massive weight loss patients, even when compared to a hostile cohort of patients whose wounds are not treated with NPT.

[EP207] CAN A PORTABLE NPWT REDUCE SURGICAL INTERVENTIONS IN DIABETIC FOOT PLANTAR LESIONS?

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To demonstrate that a portable Negative Pressure Wound Therapy (NPWT) can reduce the number of surgical solutions in the diabetic foot lesions.

Method: We enrolled about 50 diabetic patients with an open plantar wound after a surgical intervention to remove osteomyelitis. According with the Texas University Classification (TUC) for diabetic foot lesions, all the recruited wounds were II A-B; we treated them with a portable NPWT*, changing the dressing twice a week. Even if the goal of the negative pressure treatment should be the wound bed preparation for a surgical intervention (skin graft or dermal substitute), we evaluated how many wounds avoided surgery because of a partial/complete healing after four weeks of therapy.

Results / Discussion: More than 50% of the wounds achieved the healing without surgery within the observation time; in the other cases we need surgical solutions in less than 35%. The other wounds healed without surgery within the next four weeks.

Conclusion: This work demonstrated that it's possible to reduce the costs of hospitalization using a portable medical device as NPWT. Even if this device is more expensive than other dressings, we really have a very impressive cost saving, avoiding hospitalization and surgical interventions.

*PICO (Smith & Nephew)

[EP208] CHRONIC WOUNDS: EFFECTS OF VACUUM-ASSISTED CLOSURE PERFORMED AT THE RECIPIENT SITE BEFORE MYOCUTANEOUS FLAP RECONSTRUCTION. FIVE YEARS EXPIRIENCE

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: In this report we asses the effect of topical negative pressure (TNP)* on wound healing, granulation tissue formation, bacterial clearance, pain, time involvement of the staff, total costs in chronic wounds in comparison with modern wound dressings before myocutaneous flap reconstruction.

Method: Eighteen patients with a chronic wound were randomized to initial treatment with topical negative pressure* or modern dressings. The authors primary endpoint was a granulated wound or a wound ready for flap reconstruction.

Results / Discussion: The time to the primary endpoint with topical negative pressure* was not significantly shorter. topical negative pressure* did not result in significantly faster granulation or wound surface reduction or better bacterial clearance, but patient comfort was an important advantage. Time involvement and costs of nursing staff were significantly lower for the topical negative pressure*, but overall costs were similar for both groups.

Conclusion: Wound preparation and healing with topical negative pressure* is at least as fast as with modern wound dressings. The total costs of topical negative pressure* are comparable to those of modern wound dressings, but the advantage is its comfort for patients and nursing staff.

*Vacuum-assisted closure therapy, VAC

[EP209] MANAGING WOUNDS IN LOAD BEARING AREAS WITH AN ULTRA PORTABLE SINGLE USE NEGATIVE PRESSURE WOUND THERAPY: A CASE SERIES

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To establish the benefits of a new system* in the treatment of patients with wounds in areas where bridging may previously have been necessary.

Method: Patients were recruited according the need for negative pressure wound therapy, the site being in a load bearing area and where a small portable device was preferable to a larger NPWT device. 2 patients with pilonidal sinus wounds and 3 patients with sacral pressure ulcers were involved in the evaluation. The therapy was commenced and left in place until changing was necessary (3-7 days). Wound assessments and imaging were carried out at each dressing change.

Results / Discussion: The need to reduce the risk of pressure ulceration is paramount in all patient groups. In addition it is essential that interventions do not create added localised pressure relating to the device. The five patients involved in the study were able to be treated with the modified portable negative pressure device, despite having wounds in load bearing areas. The patients went on to heal in a relatively short time frame and in addition were able to achieve early mobilisation (see figures 1 and 2). Patients were also able to be discharged earlier and had reduced frequency of dressing changes compared with traditional wound dressings, so there was a cost saving.

Conclusion: Therapies for wound healing cannot be considered in isolation. The patient's co-morbidities, wound position, mobility and patient preferences should all be part of the decision making process. This small case series has demonstrated some of the benefits of a new Soft Port system incorporated into a portable single use NPWT device.

(More images will be available)

Figure 1 and 2 Young Male patient with pilonidal sinus disease, completely healed in 10 weeks using a dressing**

* Soft Port™ system
** PICO

[EP210] NEGATIVE PRESSURE WOUND THERAPY TREAT IMPLANT RELATED CHRONIC REFRACTORY WOUNDS IN CARDIOVASCULAR DEPARTMENT: 2 CASES REPORT

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Background: Treatment of implanted pacemaker or artificial blood vessel is saving lives for severe arrhythmia or abdominal aortic aneurysm in patients with serious cardiovascular disease.But as with all of the artificial material implantation in the human body, the infection is a serious complication. Plastic surgeons have expertise in the treatment of various chronic wound, in recent years more and more patients with refractory wounds following a referral by other departments to treatment of plastic surgery. Treatment of complex chronic wound infection induced cardiovascular surgical implants is a new challenge to plastic surgeons.

Methods: The two patients were referral from the department of cardiology inour hospital. One case is the recurrent peptic ulceration caused by chest skin infection after pacemaker implantation, and the other one is the abdominal aortic aneurysm after artificial vascular bypass surgery on both sides of the groin area refractory wound. Debridement was performed accompanying with negative pressure wound therapy for more than 10 days and continuous irrigation. In the postoperative Phase thickness and split-thickness skin grafting was used for surgery after wound bed preparation, and accompanying with continuous negative pressure ventilation treatment in skin grafting area.

Results: 2 patients recovering well from surgery, wounds healed well.

Conclusion: Irrigation is still the most effective means for infected wounds. All kinds of negative pressure wound therapy for refractory wounds is a conventional means; while in the clinical application process, minor treatments such as deep with drainage to facilitate washing and other techniques which can be applied combined according to the treatment needs to improve the therapeutic effect.

[EP211] TREATMENT OF TYPE IIIB OPEN TIBIAL FRACTURES

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To evaluate the delayed soft tissue coverage after previous negative wound therapy in treating wounds associated with Type IIIb open tibial fractures.

Method: This study included 35 adult patients available for follow-up for over 1 year after surgery. There were 29 males and 6 females with an average age of 45 years old.

Results / Discussion: Fracture location were 10 cases of proximal, 13 cases of mid-shaft, 12 cases of distal part of tibia. Definitive fixation from injury averaged 10 days. For soft tissue reconstruction, 14 cases of free flaps and 21 cases of perforator based rotational flaps. The mean time to radiographic union was 27 weeks. Complications were observed in 16 cases (45.7%). 3 cases of the superficial infection, 2 cases of deep infection, 4 cases of partial flap necrosis, 3 cases of mal-alignment, 3 cases of joint stiffness, and one cases of hardware breakage were observed. The mean lower extremity functional scale was 68.5 and the factors to influence the clinical results were severity of open wound size (p=0.000) and the occurrence of complications (p=0.000) with results of multiple regression analysis.

Conclusion: In the treatment of Type IIIb open tibial fractures, good clinical results can be expected provided that complications are prevented through proper reduction, firm fixation, early soft tissue reconstruction, and early rehabilitation. Delayed soft tissue coverage after previous negative wound therapy was considered an alternative treatment method in open lower extremity fractures associated with severe concomitant injury.

[EP212] NEGATIVE PRESSURE THERAPY FOR THE COVERAGE TREATMENT IN ORTHOPEDIC SURGERY

Oscar Izquierdo[1], Barcelona, Spain , Pere Coca[2], Sant Boi de Llobregat (Barcelona), Spain , Juan Castellanos Robles[3], Barcelona, Spain , Toni Serrano-Blanco[4], Barcelona, Spain , Ernesto Muñoz[3], Barcelona, Spain , Enric Domínguez[5], Barcelona, Spain , Marta Ferrer[6], Barcelona, Spain , Antonia Salas[6], Barcelona, Spain

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: We introduce our idea in the management of the negative pressure wound therapy (NPWT) to improve the results of the coverage surgery.

Method: 57 cutaneous defects have been treated. NPWT was used in patients in whom the coverage surgery was indicated.
Debridement was performed in all cases. 65 debridements, 25 partial thickness skin grafts (PTSG), 25 flaps and 10 to treat complications were performed.
NPWT was maintained until the appearance of the wound was the most proper for covering.
An econometric model was developed to calculate the mean cost per patient in the four options: NPT and PTSG, conventional treatment and PTSG, NPT and flap, and conventional treatment and flap.

Results / Discussion: Mean age was 63 years and there were 28 women. The most frequent locations were the leg (16).
The average time between the beginning of the problem and the debridement was 236 days. The average time between the debridement and the coverage was 14 days. The average use was 19 days.
The most frequent etiologies were infection (13). 86.4% of flaps survived and the average time for healing was 85.3 days. 72% of PTSG survived and the time for healing was 47.6 days.
The mean cost per complete treatment until total healing was: 15.230,04€ for PTSG without NPWT and 2.388,81€ with NPWT. For flap group: 11.558,36€ without NPWT and 8.271,63 € with NPWT.

Conclusion: NPWT is an alternative for preparing the fields before definitive coverage.
NPWT is an expensive treatment, and it should only be used with specific indications.
Our methodology reduces its use, avoids cases in which the success is low and reduces the cost.

[EP213] COST EFFECTIVE AND QUICKER HEALING OF CHRONIC WOUNDS

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: Can the use of NWPT result in faster healing of chronic wounds than conventional treatment?
Can the use of NWPT give economic savings when compared with conventional treatment?

Method: A cohort case study of 9 patients with a chronic wound treated by home nurses for an average of 6 months. NWPT was used for 2 weeks and the patient followed up for a further 4 weeks after a returning to conventional treatment. The wounds were photographed and measured weekly for 6 weeks and weekly healing rates calculated via a telemedicine journal. Data were collected on the cost of treatment (products used and nursing time) prior to the use of NWPT, during use and the following 4 weeks.

Results / Discussion: When compared to conventional treatment the use of NWPT resulted in:

- An average weekly reduction in wound size of 21 % compared to 3 %
- Fewer weekly nurse contacts and less time required for wound care
- A wound size achieved approximately 10 weeks earlier than predicted with an average cost saving of €510
- 5 wounds that healed on average 24 weeks earlier than predicted, with an average cost saving of €1075 for the total wound care package

Conclusion: Treating chronic wounds in the community setting with NWPT can result in accelerated healing both during and after its use. The reduction in resources that a shortened wound care package requires can give substantial cost savings.

[EP214] TISSUE REGENERATION AND WOUND HEALING UTILIZING PLANT BASED STEM CELL NANOTECHNOLOGY THERAPY (SCNT) IN PATIENTS NONRESPONSIVE TO TRADITIONAL NEGATIVE PRESSURE WOUND THERAPY (NPWT)

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To see if plant stem cell nanotechnology (SCNT) could stimulate wound healing in patients who were either nonresponsive or demonstrated a plateau effect using traditional negative pressure wound therapy (NPWT). Patients who were placed on NPWT and did not improve by a decrease in 20% wound volume after at least 2 or more consecutive weeks of NPWT were recruited in the case study.

Method: A data collection form tracked weekly wound size, exudate amount, and percentage of both granulation tissue and nonviable tissue, combined with weekly pictures on 10 patients. The wounds were sharps debrided, cleansed with a non-cytotoxic cleanser, then the SCNT dressings applied and changed two to three times per week for 4-6 weeks.

Results / Discussion: The wounds treated with SCNTS did decrease in size, volume and demonstrated and increase in granulation.

Conclusion: Traditionally deep cavitating and heavily draining wounds have been treated with NPWT to stimulate granulation and decrease in size and depth. There are a large subset of patients who do not respond to NPWT or who have been treated NPWT and have not continued to demonstrate improvement. We postulate that cell signalling; growth factor stimulation, and cell migration are all defective in this population of patients. Utilizing the SCNT system was able to stimulate the proliferative phase of wound healing and show significant wound healing despite having cavitating and draining wounds. Further investigative studies are warranted.

[EP215] THE IMPACT ON COST & PATIENT QUALITY OF LIFE USING A NEW NOVEL DISPOSABLE NPWT DEVICE

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To evaluate the Cost Impact and Patient Quality of Life of a new Innovative Portable, NPWT on 20 patients with wounds that would benefit from the use of a NPWT.

Method: We enrolled 20 patients with wounds that would benefit from using NPWT over a two-month period. The wounds needed to fit the criteria i.e. no greater than 18 x 18 cm with less than 20cc a day of exudate.

- Data regarding co-morbid conditions, location of wound was collected
- The Wound Care System was applied to each wound
- Patients followed prospectively with twice-weekly clinic visits
- On completion of the study, patients were asked to complete a brief survey regarding their experience with this treatment
- At the end we compared the total cost of treatment using our new innovative portable NPWT device to our costs of using NPWT in the past

Results / Discussion: We have found that the device has limited impact on patient quality of life and 30% decrease in cost compared to using our previous NPWT device.

Dressing changes were simple and quick, and the quality of life improvement that has been shown in a recent randomized controlled clinical trial has been duplicated in our practice.

Discussion: The Wound Care System has proven to provide patients with lower-exudating wounds and special lifestyle, work or mobilization needs the ability to receive negative pressure wound therapy with little impact on their quality of life. This novel wound care device has proven to be a cost effective option for facilitating earlier hospital discharge especially if the hospital system is planning to pay for the rental of a powered system. The most important and gratifying aspect of using this system has been the improvement in quality of life expressed by the patients who have had experience with it.

[EP216] EFFECTIVENESS OF NEGATIVE PRESSURE WOUND THERAPY WOUND THERAPY /CLOSED INCISION MANAGEMENT IN THE PREVENTION OF POST-SURGICAL WOUND COMPLICATIONS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: The treatment of post-surgical wound complications, such as surgical site infections, generates a significant burden for patients and healthcare system. The effectiveness of negative pressure wound therapy has been under investigation but to date no systematic review has been published in relation to its effectiveness in the prevention of surgical wound complications. The aim of this systematic review was to identify the effectiveness of negative pressure wound therapy in the prevention of post-surgical wound complications in adults with a closed surgical incision compared to standard surgical dressings (SSD's).

Method: A systematic review following the Joanna Briggs Institute (JBI) protocol was conducted. Electronic databases were search and following an assessment and review , selected studies quantitative data was pooled in a statistical meta-analysis using JBI-MAStARI.

Results / Discussion: Eight studies were included in the review. The meta-analysis revealed statistically significant differences in favour of the use of negative pressure wound therapy as compared to standard surgical dressings for surgical site infections. Conflicting results were found for wound dehiscence and seroma.

Conclusion: Given the small number of studies, mostly retrospective comparative cohort in design, no definitive conclusions can be reached as to the effectiveness of the use of NPWT in the prevention of surgical wound complications. However there was a demonstrated association between the use of NPWT and reduction in surgical site infection. Focus of further research on this topic should be level one studies (randomized controlled trials) on patients identified as 'at risk' in the preoperative period.

[EP217] AUDIT ON THE USABILITY, USER AND PATIENT SATISFACTION OF TUBULAR BANDAGE IN VACUUM THERAPY

Daniel Ostapowicz[1], Berlin, Germany , Markus Duft[2], Wien, Austria , Karsten Griesshammer[3], Rengsdorf, Germany , Stefanie de Lange[3], Rengsdorf, Germany , Martin Abel[4], Neuwied, Germany

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: The newly developed tubular bandage[1] was tested by users to confirm easiness and quickness of application, satisfaction of patients and users with respect to mobility, product characteristics and safety as contour-based dressing for negative pressure therapy.

Method: The clinical international multi-center evaluation on several patients with wounds at different extremities was conducted by a one-time, retrospective evaluation of the product after use with 1 to 10 patients.

Results / Discussion: Hospitals (N= 12) in Germany and Austria included 29 patients with different wounds on various extremities (15 lower leg, 9 foot, 4 arm or hand, 1 upper leg) and etiologies (ulcus cruris, amputations, fixation of skin-thickness skin graft).

The duration of application showed a time saving compared to standard methods of 33 to 90%. The adaption to the localization and fixation with adhesive foil was found to be easy and fast. In 17% of patients leakages occurred at the adhesive foil (6%) or another location (11%) as track pad, edge of the dressing or big toe and were fixed by taping with foil. The dressing was changed after 2-8 days dependent on the wound and amount of exudate. The product was comfortable and usable according to mobility for 93 % of the patients. Water vapor permeability could be confirmed for 93% of patients, only 7 % had moisture accumulation accompanied by signs of macerations at wound edges.

Conclusion: The tested tubular bandage[1] is suitable as contour-based dressing for negative pressure therapy and is time and cost economic by fast and easy handling.

[EP218] NPWT WITH INSTILLATION: OUR EXPERIENCE TO TREAT HARD-TO-HEAL WOUNDS AND BONE INFECTIONS

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: Treatment of soft tissue defects with exposed bones and joints, resulting from trauma, infection, and surgical complications, represents a major challenge. Negative Pressure Wound Therapy (NPWT) is used in the orthopedic field for management of traumatic or open wounds with exposed bone, nerve, tendon, and orthopedic implants. The purpose of this study was to evaluate the use of NPWT with instillation to improve the outcome of high risk wounds in critical patients affected by periprosthetic infections.

Method: We observed 22 patients out of 36 affected by severe periprosthetic infections with comorbidities, presenting difficult to heal wounds. These infections were treated with 2 stage procedure, and NPWT with instillation was applied. Targeted antibiotic long therapy was administered. The study evaluated treatment for up to 16 weeks or till complete closure of the wound compared with control group of 14 patients treated with conventional dressing. Size of wound healing and time of closure were compared.

Results / Discussion: 22 patients received NPWT with instillation for 3 weeks. The sponge was inserted into the wound cavity/periprosthetically at the pressure of 150mm Hg till sponge removal. A better and more rapid control of the infection and reduced time to complete closure of the wound was achieved in 19/22 patients treated with NPWT compared with 5/14 patients in control group.

Conclusion: NPWT would increase faster wound healing than treatment with conventional dressing therapy. Based on our data, NPWT with instillation shows a high infection eradication rate with positive effect on wound healing and should be considered for high risk wounds in patients affected by periprosthetic infections with comorbidities.

[EP219] VACUUM THERAPY IN THE TREATMENT OF PURULENT CHEST WOUNDS IN PATIENTS WITH GANGRENOUS LUNG ABSCESS

Evgenii Korymasov[1], Samara , Russian Federation , Mikhail Medvedchikov-Ardiya[2], Samara , Russian Federation , Armen Benyan[2], Samara , Russian Federation , Sergey Pushkin[2], Samara , Russian Federation

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: The improvement of outcomes of treatment of patients with gangrenous lung abscess.

Method: We used the thoracoabscessostomy in 35 patients with gangrenous lung abscess in 2012-2013. Surgical approach selected chosen according to computed tomography. We resected rib. In most cases it was VI or VII on the edge of the middle or posterior axillary lines to the right. After removal of free-lying necrotic masses (sequestration) cavity wall fixed to the skin to create a wide wound channel. In the cavity drainage tube installed and forge an active vacuum aspiration using the apparatus for creating negative pressure. We used a variable pressure mode: - 60 mmHg to - 90 mm Hg for 3 minutes each level. Dressing was performed 1 time in 3-4 days, depending on the filling of the container.

Results / Discussion: All patients had rapid relief of fever, the daily discharge from the cavity is easily achieved in 250-300 ml. Patients required 3 to 5 dressing changes. As a result of treatment, only 1 patient died; mortality decreased from 22.2% to 2.9%. Of the 34 discharged patients surgery lobectomy was performed in 10 people.

Conclusion: The application of negative pressure in the treatment of patients with lung sequestration abscess can effectively solve the problem - remove the sequestered lung tissue, reduce toxicity, and thus prepare the patient for lobectomy.

[EP220] ANAEROBIC ABSCESS. NEW METHOD OF TREATING HUGE POSTOPERATIONAL WOUNDS OF PERINEUM OF PATIENTS WITH ANAEROBIC ABSCESS AND FOURNIER'S GANGRENE. (NPWT – NEGATIVE PRESSURE WOUND THERAPY)

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To evaluate the results of treatment of wounds of the perineum during anaerobic abscess (AA) and Fournier gangrene (FG).

Method: For the whole period 435 patients were treated. The study involved 35 patients, 28 of them with AA, 7 patients with FG. 9 cases were on the groin, thigh 8 patients, 6 patients on the anterior abdominal wall, 5 patients at the gluteal region. In 7 cases was combined lesion. Mean age was 59,2 ± 3,1 years. Patient's sex was 28 men and 17 women. The average area of wound defects acute wounds 980,8 ± 14,3 cm2.

Results / Discussion: Halving the timing of Phase 1 of wound healing (4-6 days) in all patients (standard method (9-11 days). NPWT allows monitoring wound exudation and water - electrolyte balance, intoxication, reduces bacterial contamination, number of reoperations, while in the intensive care unit in the first phase of wound healing. The second phase of wound healing expressed stimulation of reparative processes, reducing the area of the wound defect, reduced length of hospitalization by an average of 7,3 ± 3,2 days. Of side effects in 4 patients had clinically significant perifocal dermatitis, as well as pain in the minds of the vacuum. Noteworthy difficulty pressurization of extensive perineum wounds, natural orifices. Total time was about 1.5 hours.

Conclusion: NPWT method reduced the time patients staying in intensive care, preparing for plastic surgery. NPWT: an effective treatment for extensive postoperative healing of perineum during AA and FG.

[EP221] NEGATIVE PRESSURE WOUND THERAPY (NPWT) IN RECONSTRUCTIVE SURGERY

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: NPWT proved its efficacy as an adjunctive method in treatment of problem wounds of different origin. According to our several years of experience we developed our strategy and tactics of surgical approach to management of these wounds.

Method: 54 problem wounds in 50 patients with acute wounds combined by soft tissue losses and/or exposure of deep structures and slow- or non-healing chronic wounds have been included in the study. Our treatment strategy was as follows:

- clinical and laboratory examination of both the patient and the wound
- wound swabs for microbiology examinations taken regularly during the entire treatment period
- ultrasonography and/or angiography where relevant
- bone x-ray, fistulography, where relevant
- initial surgical exploration and debridement of the wounds and surrounding tissues with removal of foreign material and necrotic tissues remnants
- wound decontamination
- NPWT application using silver-impregnated mesh as wound contact layer
- NPWT sponge changes according to character and quantity of the wound discharge in intervals from 3 to 7 days
- additional wound debridement during NPWT sponge changes where relevant
- selection of wound coverage/closure method following discontinuation of NPWT

Results / Discussion: In 26 wounds deep structures were exposed. Average delay for NPWT start was 71 days. The mean NPWT duration was 9,2 days, mean sponge change was twice. Mean healing time following surgical closure was 16 days. Significant decrease in microbial contamination after NPWT was observed. No serious adverse events occurred.

Conclusion: Comprehensive patient care and active surgical approach shortened the problem wounds preparation for final closure and reduced the complication rate. Initial surgical wound bed preparation shortened the NPWT time significantly.

[EP222] EARLY EXPERIENCE WITH INSTILLATION NEGATIVE PRESSURE WOUND THERAPY

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: A recent improvement in negative pressure wound therapy (NPWT) is integrated wound instillation. This allows user-selected periodic wound instillation while maintaining the benefits of NPWT. This case series reports our experience in 34 patients using NPWT with antimicrobial instillates.

Method: Patients who had failed to progress with standard NPWT or whose wounds appeared bacterially contaminated were selected to receive instillation NPWT, with either 4 or 6 hourly instillations. Wounds were photographed and regularly assessed. Once considered ready patients progressed to standard NPWT, simple dressings or plastic reconstruction.

Results / Discussion: Wound types treated included 9 debrided diabetic foot wounds, 5 minor amputation wounds, 4 dehisced wounds, 5 leg ulcers, 3 pressure ulcers, 3 infected mesh repairs, 4 orthopaedic wounds with prosthetic implants and one necrotising fasciitis. 24 patients received the first instillation* and 10 received the second instillation**.
All but one wound improved, including 22 that had failed to respond to standard NPWT, the improvement in all cases being within 7 days. The patient that failed to respond had an infected hernia repair mesh. One patient whose wound improved underwent amputation due to ischaemic pain and a further patient died of an unrelated cause although his infected hip prosthesis wound was improving. Wound improvement with the second instillation** was more rapid and the wound bed appeared healthier.
5 patients progressed to successful plastic surgical reconstruction; the remaining patient's wound improvement allowed downgrading of therapy.

Conclusion: We believe that instillation therapy when combined with NPWT improves the outcome for patient with complex non-healing wounds. Instillation NPWT has now become our standard practice; our preference is to use the second instillation** as the instillation solution.

*Protosan®
** Octenilin®

[EP223] CONTEMPORARY PRINCIPLES OF SEPTIC WOUND HEALING

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: Development of modern approaches to wound healing at all stages of wound process.

Method: The analysis of treatment of 96 patients with acute and chronic wounds has been carried out. Surgical debridement of suppurative focus in 53 (55%) of patients was supplemented by hydrosurgical debridement with either pulse jet* or ultrasound**. In 34 (35%) of patients - with active negative pressure wound therapy (NWTP)***. On the initial stage of wound process patients were dressed up every day, and in case of vacuum suction – once every 3 days. In the main group alginate dressings**** were used. When the wound process had moved to the second stage, gel dressings***** were applied. The repeated skin grafting was made in 41 (43%) of patients.

Results / Discussion: The use of supplementary physical methods of septic wound treatment in combination with NWTP allowed to reduce the period of inpatient treatment by half. Wounds were clean, without necrosis, and granulation tissue appeared 7-8 days faster. The use of present-day dressing materials contributed to the active growth of granulation tissue and reduction of linear dimensions of a wound by 40% within 5-10 days. It allowed to perform wound closure much earlier. Economic efficiency made up 30-40%.

Conclusion: Complex approach using negative pressure wound therapy, hydrosurgical debridement, wound dressing, and skin grafting allows to optimize the wound process and increase clinical and economic efficiency.

* Versa-Jet
**Sonoca-185
*** Suprasorb CNP
**** Suprasorb A and Suprasorb A-Ag
***** Suprasorb X and Suprasorb H

[EP224] CASE SERIES TO EVALUATE CLINICAL EXPERIENCES WITH NEGATIVE PRESSURE WOUND THERAPY* SYSTEM

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To evaluate clinically the effectiveness of a fully disposable mechanically primed negative pressure wound therapy (NPWT) device* in the treatment of patients with wounds of different aetiologies. The primary outcome was the percentage change in wound size over a four week period.

Method: Ten patients were included and followed for 4 weeks. Five patients had venous leg ulceration and 5 had wounds of different wound aetiologies. Patients were seen twice weekly for re-application of the absorptive adhesive dressing that is coupled to the mechanically primed therapy unit. At each visit the peri-ulcer skin was assessed, wound progression along with patient acceptability, comfort and pain. Photographs were taken of the device in place, upon removal and post cleansing.

Results / Discussion: Initial results suggest that the therapy is comfortable to wear whilst being atraumatic on application and upon removal.

Conclusion: The mechanically powered NPWT device* is an easily transportable, fully disposable device which is both easy to apply and remove. Having the device coupled to an absorptive adhesive dressing, the NPWT device* is effective at managing exudate and inducing wound bed granulation tissue in patients with different wound aetiologies.

*Nanova negative pressure wound therapy

[EP225] AN EVALUATION OF THE EFFECTIVENESS OF COLLAGEN/OXIDISED REGENERATED CELLULOSE (ORC)* IN USE WITH NEGATIVE PRESSURE WOUND THERAPY

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: The primary objective was to evaluate the effectiveness of collagen/oxidised regenerated cellulose (ORC)* in use with negative pressure wound therapy (NPWT)** in the size reduction of wounds of differing aetiologies. Retrospective data analysis of 1,187 wounds in a US wound registry found that a combination of collagen with NPWT may be more beneficial to wound healing than NPWT alone. The study showed that wounds managed with NPWT followed by Collagen and NPWT had a significantly shorter number of days to 75% surface area reduction than wounds managed with NPWT only***. This study aims to show whether similar results are seen when using collagen/ORC in combination with collagen-only.

Method: Ten patients were seen three times a week at the research clinic for 4 weeks. At each visit a photograph was taken of the dressing in place, the wound pre-cleansing, post cleansing and when the dressing had been applied. Weekly, the wound was measured and the change in area between week 0 and week 4 calculated. At weekly visits the percentage of granulation tissue present in the wound, the level of exudate, the condition of the peri-ulcer skin and the level of pain experienced by the patient using a visual analogue scale (VAS) were recorded.

Results / Discussion: Previous results have shown that collagen/ORC is effective when used in conjunction with NPWT.

Conclusion: The use of negative pressure wound therapy in combination with collagen/ORC dressings is effective in managing wounds.

*Promogran collagen/oxidised regenerated cellulose (Systagenix)
** VAC negative pressure wound therapy device (KCI)
***Miller-Mikolajczyk C & James R. EWMA, 2013

[EP226] CONTROLLED CASE SERIES LOOKING AT THE EFFECT OF USING A NON-ADHERING SILICONE DRESSING* AS A PRIMARY DRESSING WITH NEGATIVE PRESSURE WOUND THERAPY (NPWT) ON PATIENTS WITH DIFFERENT WOUND AETIOLOGIES**

Nicola Ivins[1], Llantrisant South Wales, United Kingdom , Keith Harding[1], Llantrisant South Wales, United Kingdom , Susan Hagelstein[1], Llantrisant South Wales, United Kingdom , Nia Jones[1], Llantrisant South Wales, United Kingdom

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: Controlled case series looking at the effect of using a non-adhering silicone dressing* as a primary dressing with negative pressure wound therapy (NPWT)** on patients with different wound aetiologies.

Method: Twenty patients (10 non-adhering silicone dressing plus NPWT/ 10 NPWT only) were seen 3 times weekly, at the research clinic. Dressings were changed at each visit. Photographs of the wound bed and per-ulcer skin were taken weekly. Pain was measured using a visual analogue scale (VAS) during the application of the dressing, whilst the dressing was insitu beneath the NPWT and during the removal of the dressing at the dressing change visit. Visual signs of trauma were recorded along with the ease of application and removal by the clinician and patients were also recorded. The wound area was calculated and the reduction over 4 weeks recorded.

Results / Discussion: Results from previous studies suggest that the non-adhering silicone dressing is very effective dressing when used with NPWT. It was noted that the exudate passed through the dressing well into the canister, and it did not adhere to the wound bed. Feedback from the patients was positive, and the majority reported that the dressing was comfortable during application and removal.

Conclusion: Much has been written about the pain experienced by patients during dressing changes. Using a wound contact layer that conforms to the wound bed and is atraumatic to the wound bed and also to the patient is an important feature.

*ADAPTIC TOUCH® (Systagenix)
**V.A.C.® (KCI)

[EP227] NEGATIVE PRESSURE WOUND THERAPY IN STERNAL OSTEOMYELITIS: A SAFE BRIDGE-TREATMENT TO A BETTER DELAYED SURGICAL THERAPY

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: The Negative Pressure Wound Therapy (NPWT) is a well-established non-invasive active therapy to safely treat post-sternotomy osteomyelitis and mediastinitis, devastating complications with high mortality rate. Aim of this study is to view the therapeutic effect of NPWT, particularly to its efficacy as a bridge-treatment for delayed surgical therapy.

Method: From 2010, 15 patients, 10 male and 5 women mean age 62.2 years (range 49-85), were treated with NPWT for sternal osteomyelitis. All the patients, undergone to coronary by-pass procedure, presented sternal osteomyelitis with deep mediastinitis in 6. In all the cases one or more organisms were isolated from sternal dehiescence. After surgical infection debridement we used NPWT treatment with -80 mm Hg continuative pressure and both polyuretane sponge and medicated gauze, with a changing time of 48 hours.

Results / Discussion: All patients had good results. We didn't have any complication during the NPWT and the procedure was well tolerated by all the patients. Mean time of infection control and tissue regeneration was about 3.5 weeks. After 3 microbiological controls negative for infection, 14 patients underwent surgical sternal closure, with Ravitch's procedure in 9 cases, titanium plates in 5. In a patient, the oldest one, due to multiple cardio-respiratory comorbidities we prolonged the NPWT time (5 weeks) and the sternal dehiscence safely healed spontaneously.

Conclusion: Our small report reveals that NPWT seems to be an effective and safe treatment for sternal osteomyelitis and deep mediastinitis after cardiac surgery. It could be used both as first salvage treatment for local infection in very damaged patients and as a bridge to final surgical treatment, improving patient's comfort and reducing hospital stay and time of healing.

[EP228] EFFECTIVENESS OF TOPICAL NEGATIVE PRESSURE THERAPY FOR ACUTE AND CHRONIC WOUNDS

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To evaluate the effectiveness and the reduction healing time using negative pressure wound therapy (NPWT) in acute and chronic wounds.

Method: A prospective study was undertaken on NPWT in adult patients with chronic and acute wounds of different etiology: acute wounds (dehiscence suture, fistfuls, traumatology surgery wounds etc.), vascular ulcers, neuropathic ulcers, and pressure ulcers. Maximum time of application the NPWT was 45 days for all the patients.

Analyzed variables were: wound healing time, time of treatment with NPWT and reduction wound size.

Results / Discussion: 44 patients were included, 54,5% females and 45,5% males. Mean age was 63 years. Wounds etiology was: acute wounds: 40,9%; vascular ulcers: 27,3%; neuropathic ulcers: 15,9% and pressure ulcers: 15,9%.

- Median NPWT treatment time was 16,8 days.

- Successful treatment was noted for 60% of patients.

- Average of patients with wound size reduction using NPWT during 45 days was 25%. – 90% of this
group showed a reduction size wound of 90%:13,6% patients; reduction size wound 80%: 6,8% patients; reduction size wound 50%: 4,5%patients.

- 6% of patients required previous skin drafting to complete wound healing.

- NPWT treatment was non-successful for 9% patients.

Conclusion: Treatment with NPWT is a useful tool and a complementary and effective method to improve healing on complicated, acute or chronic wounds.

[EP229] SETTING UP AN EFFECTIVE AND EFFICIENT NEGATIVE PRESSURE WOUND THERAPY SERVICE ACROSS BOTH PRIMARY AND SECONDARY CARE

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: Tissue Viability set up a co-ordinated negative pressure wound therapy (NPWT) service across primary and secondary care in order to:

- Minimise delays in NPWT provision
- Reduce costs
- Improve equity of service
- Optimise patient safety

Method: Prior to service redesign NPWT provision was determined by patient location. Primary care held purchased NPWT pumps in several locations. Secondary Care rented NPWT pumps from two companies.

Delays of 3-5 days occurred in primary care if a local pump was unavailable. Secondary care patients had to await delivery of pumps/consumables which could cause a 1-2 day delay in treatment. With each secondary care delivery costing £50, providing 15 patients with NPWT cost the service £1500/month in delivery fees alone.

Using NPWT from two providers raised additional patient safety and staff education issues.

Results/Discussion: To standardise NPWT across the service Tissue Viability purchased NPWT pumps from a single provider. This reduced staff training by 50% and improved patient safety.

Tissue Viability re-designed the service by strategically distributing NPWT pumps between the departmental office and both acute hospitals. This gave qualified staff 24-hour access.

The current service provides a pump and consumables for 2 dressing changes. This ensures same day commencement of therapy for all patients (thereby eliminating treatment delays) while simultaneously eliminating all delivery costs.

With NPWT systems now transferrable between primary and secondary care patients receive uninterrupted therapy irrespective of their patient journey.

Conclusion: Restructuring the NPWT service across the health board has eliminated delays in NPWT therapy and reduced service costs by eliminating deliveries in secondary care.

[EP230] EFFECTIVENESS OF NEGATIVE THERAPY IN THE TREATMENT OF PRESSURE ULCERS

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To investigate in the different sanitary publications the effectiveness of the negative pressure therapy in the treatment of the pressure ulcers.

Method: The following databases were used to obtain scientific evidence: Cochrane Library extra and Medline with the software of Pubmed. The search was limited to articles written in English and Spanish. The instrument of critical reading was CASPE.

Results / Discussion: After evaluating all found articles, five articles were selected; three randomized controlled trials and two case studies.

Conclusion: Although the negative pressure therapy can result useful in the evolution of the pressure ulcers, the scientific available evidence provides no conclusive evidence for the negative pressure therapy in the treatment of the pressure ulcers instead of other traditional alternatives.

[EP231] CONTINUOUS HIGH-PRESSURE NEGATIVE SUCTION DRAIN: NEW POWERFUL TOOL FOR CLOSED WOUND MANAGEMENT: CLINICAL EXPERIENCE

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: Although various reconstructive flap surgeries have been successfully performed, there still are difficult wound complications, such as seroma formation, wound margin necrosis, delayed wound healing, and even flap failures. The negative-pressure wound therapy has been described in detail in the literature to assist open chronic/complex wound closure in reconstructive surgery. However, the negative-pressure wound therapy was difficult to be applied under the incisional closed wounds.

Method: A total of 23 patients underwent the various reconstructive flap surgeries with continuous high-pressure negative suction drain. Instead of using regular suction units drainage tubes* were connected to the wall suction unit, providing continuous high-powered negative pressure. In addition, continuous subatmospheric suction pressure (100-300 mmHg) was applied. Outcome of the measures was obtained from the incidence of seroma, volume of postoperative drainage, hospitalization period, and incidence of other typical wound complications.

Results / Discussion: Using continuous high-pressure negative suction drain, successful management of seroma was obtained without any major complication such as wound infection, flap loss, and wound margin necrosis, except for only 1 case of seroma after discharge from the hospital. The indwelling time of the drain in the latissimus dorsi donor site was significantly reduced in comparison with the authors' previous data (P = 0.047). The volume of drainage and hospitalization period were also reduced; however, these were not statistically significant. The dead space with continuous high-pressure negative suction drain was more reduced than in the control group in the immediate postoperative period and confirmed with ultrasonography.

Conclusion: Continuous high-pressure negative suction drain might be the simple and powerful solution in the management of challenging closed wounds.

* Barovac® (50-90 mm Hg, Sewoon Medical, Seoul, Republic of Korea)

[EP232] NEGATIVE PRESSURE TREATMENT WITH SMALL VESSEL VASCULITIS

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To develop local treatment for vasculitis ulcers.

Method: Clinical trial, 15 patients with small vessel vasculitis ulcers.

Study question 1: Is negative pressure treatment suitable for vasculitis ulcer?

Study question 2: Can negative pressure treatment accelerate vasculitis ulcer healing?

Results / Discussion: Negative pressure treatment executes granulation tissue growing even in 1-2 weeks despite of the high dose of immunosuppressive medication. If negative pressure treatment dissolved, fibrinotic tissue will recur in few days.

Conclusion: We found that negative pressure is effective and adequate treatment for vasculitis ulcers. Negative pressure accelerates healing distinctly. It should be used on vasculitis ulcers, even for long period, until skin graft operation or when wound is complete healed.

[EP233] AN EVALUATION OF VAC VERAFLO THERAPY IN THE MANAGEMENT OF CHRONIC VENOUS LEG ULCERS

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Wednesday, May 13, 2015

E-poster session: Negative Pressure Wound Therapy

Aim: To evaluate the use of VAC Veraflo™ Therapy for the management of venous leg ulcers with a view to preparing for Split Skin Grafting

Method: Case Studies were carried on chronic exuding venous leg ulcers. Patients had a history of regular hospital admissions for management of infection and debridements. VAC Veraflo™ was applied to the large venous ulcerated areas and redressed twice weekly. Anti-microbial fluid such as Prontosan™ and Acetic Acid 1% was instilled in regular cycles of soak phase and negative pressure therapy.

Results / Discussion: The venous leg ulcers improved greatly with 100% granulation obtained and reduction in oedema and exudate loss. The leg ulcers were deemed to be suitable for split skin grafting post VAC Veraflo™ therapy which was carried out with excellent results. Patients were then put into compression hosiery and discharged.

Conclusion: VAC Veraflo Therapy is an excellent new option for the treatment and management of large exuding chronic venous leg ulceration. This has reduced the need for regular readmissions into hospital for the management of these leg ulcers as well as reducing the need for regular dressings to manage exudate.