

Use of bio-cellulose gel and a bio-cellulose nano-structured matrix as palliative care in a hard to heal chronic wound

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Background

The improved understanding of the physiology of wounds and the processes involved in wound healing has resulted in a change of understanding as regards the wound environment and healing.

Previous non-healing wounds were assumed to have a deficiency in the epithelial cells, it is now excepted that it more a problem of a deficient or non-existent Extra Cellular Matrix (ECM) which is the major issue in static non healing chronic wounds.

A novel hemicellulose membrane and a fiberpolysaccharide gel made of plant stem cells with a nano-fiber delivery system, used for wound palliative care in chronic non-healing wounds is described

Methods:

A natural bio-cellulose gel and a bio-cellulose nano-structured matrix wound dressing was evaluated in a palliative case study.

The bio-cellulose gel and a bio-cellulose nano-structured matrix dressing was applied to the cleansed wound site and covered with a sterile gauze with 2-3 dressing changes per week.

The wound was observed closely for any signs of healing initiation and epithelialization.

Results:

The natural dressing used stimulate this chronic wounds halted in the inflammatory state of wound healing to progress to a proliferative state.

The application of a bio-cellulose gel and a bio-cellulose nano-structured matrix dressing, decreases periwound edema and stimulate this extremely hard to heal wound (even if it doesn't bring complete closure), facilitating palliative wound care in this scenario, despite the used of concomitant radiation therapy.

No adverse effects were reported.

Conclusion:

Further studies are needed to determine if the natural dressing is applicable in other acute and chronic wound settings or may have potential anti tumor properties.

Case study

72 year old male.
Squamous cell carcinoma.
3 month evolution.
Exposed bone.
Epithelialization over bone observed at 2 day with edema reduction.



Initial



Nanogen Aktiv applied



2 Day

Nano-structured matrix dressing was applied previous to radiotherapy.
Matrix kept integrate.



Day 2



Day 6 After radiotherapy



Day 15

The bio-cellulose gel and bio-cellulose nano-structured matrix joint treatment, move wounds into a proliferative stage of wound healing despite radiation treatment.
This treatment provides an alternative to palliate wound management.



Day 31



Day 36



Day 45

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Use of a Novel, Bio-Cellulose Nano-structured Gel (Nanogen Gel™) to Treat a Traumatic Abdominal Wound in a Paraplegic Male.

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GENADYNE
ADVANCED TECHNOLOGIES IN WOUND CARE

Michael S. Miller DO, FACOS, FAPWCA, WCC CEO and Medical Director – The Miller Care Group Indianapolis, Indiana

50 year –old male with T5-level paraplegia presented with a new onset of a traumatic abdominal wound. He had a moderate abdominal pannus and so was unaware of it's presence until he identified copious drainage on his clothing over several weeks. He did not self treat but immediately came to the clinic for evaluation. The cause was identified as a new, woven leather belt that he had worn with his pannus sitting on top as he engaged in his activities of daily living. The Nanogen Gel was applied in a thin layer to the wound and covered with a semi-absorbent island dressing and changed three times a week. The abdominal wound demonstrated remarkable healing as shown.

Nanogen is a Bio-Cellulose nano-structured membrane synthesized by a bacterial strain *Acetobacter Xylinum* through a fermentation process. The membrane can be applied directly or converted into a gel matrix for use on multiple types of wounds. Early studies suggest this novel product has excellent potential in promoting healing in otherwise recalcitrant wounds.



October 9, 2014



October 23 2014



November 20, 2014

A CLINICAL EVALUATION OF A BIOCELLULOSE MEMBRANE DRESSING IN NEUROPATHIC AND NEURO-ISCHAEMIC ULCERATION

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Background and Aims

The diabetic foot ulcer is a major cause of lower limb amputation^{1,2}. When foot ulcers do not respond to basic treatment then advance treatments such as extracellular matrix proteins may offer an alternative¹. Aim to see if Nanogen bio cellulose products heal previously unhealed chronic wounds in a cost effective manner.

Method Patients with foot ulcers that had failed to heal in six months or more were evaluated for 2 - 4 weeks A full holistic assessment was undertaken :-gender, age wound type, underlying comorbidities. Wounds were measured and photographed at every dressing change with observations on peri-wound skin, exudate type and colour. Secondary dressing and off-loading were applied at the discretion of the multidisciplinary team. All patients were reviewed regularly. All patients documented length of treatment and estimated cost to date.

Results 4/20 patients had neuroischaemic, neuropathic or mixed aetiology ulcers the mean non-healing time prior to evaluation 92 days, Mean to time to healing 14.25 days.. Using a conservative cost model, this small sample demonstrated cost efficiencies compared to maintaining the wound. **Conclusion** Nanogen Aktiv appeared to kick start hard to heal wounds. It mimics the wound ECM and stimulates epithelialisation and improves inter cellular signalling, both of which have been shown to be critical in stimulating the healing of neuropathic and neuroischaemic foot ulcers. . Nanogen healed 18 out of 20 previously unhealed wounds .F

Case study Example.

54 year old insulin dependent diabetic presented with ulceration to his right hallux of 8 weeks duration. He been given broad spectrum antibiotics but the wound had failed to improve. On examination he had full complement of foot pulses with good biphasic Doppler signals. His Right Hallux was grossly oedematous with a necrotic area on dorsal and plantar aspect of his phalangeal joint. These appear to be connected. He had a ray amputation of the right hallux on 18th September 2015 he was admitted to the hospital with an abscess associated with sepsis third right toe, a foreign body was surgically removed following debridement he was given systemic antibiotics Flucloxacillin. Nanogen (Genadyne Pharma)was applied as a primary dressing with secondary dressing of Mepore® (Molnlycke Health Care. 23rd September he developed a sinus of the right plantar, topical negative pressure was applied maintaining a seal continued to be a challenge and this affected his quality of life. The patient then requested a return to Nanogen and mepore combination. He continued to comply with offloading, and he went on to heal successfully within 2 months.

References

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- 2 Lauterbach s,Kostev K, Kholman T, (2010) Prevalence of Diabetic Foot syndrome and its risk factors
Journal of Wound Care Vol 19 No 8 August 2010 pp 333-337



Image 1 18th September 2015, On referral to wound care team following surgery



Image 2, 23rd September 2015, 5 days following Nanogen application haemoserous exudate, granulating wound bed.



Image 3, 14th October 2015, 25 days following Nanogen application, rapid epithelisation



Image 4 21st October 2015 almost healed

BIOCELLULOSE NANO-STRUCTURED MATRIX AS PRIMARY WOUND HEALING DRESSING IN SKIN LESIONS OF A PATIENT WITH TOXIC EPIDERMAL NECROLYSIS OR LYELL’S SYNDROME

Elizondo-Almeida J.*, Boniche-González E**, Montero-Chacon L.***

Introduction

Several treatments have been used in skin lesion of patients with TEN. The aim of this case is to describe the outcomes obtained using a biocellulose nano-structured matrix in a patient admitted to the Intensive Care Unit with a Lyell’s Syndrome or toxic Epidermal Necrolysis (TEN) This disease is a unique rapidly developing mucocutaneous reaction pattern, characterized by sheets of erythema, necrosis and bullous detachment of the epidermis, closely resembling that of scalding of the skin and rapidly fatal, was described by Lyell, and is now recognized as toxic epidermal necrolysis (TEN) Lyell's syndrome. Drug-induced hypersensitivity syndrome was rule out in this case.(1)

Material and methods

Data from 1 patient admitted at the Intensive Care Units at Hospital Mexico, Costa Rica was collected. Time to complete healing. demographic data, co-morbidities, concomitant medications, time to healing, length of stay and complications were addressed.

Results

A 25 year old man was admitted to Hospital Mexico’s Intensive Care Unit, in a single isolated room and in a controlled microbial environment, with an extended cutaneous rash, with mucositis affecting conjunctivas, oral mucosa and genitalia. It has facial and body crusts with erosions. The patient has history of taking sulfasalazine for his CUCI, ____ days prior to the onset of skin manifestations. The area of bullae some already torn and sloughing cover 42 % of BSA. Nikolsky’s sign was positive Initial laboratory studies showed: hepatitis with elevations of his AST (which peaked at 201 mg/dL) and ALT (300 mg/dL) LDH (338mg/dL), total bilirubin(1.83 mg/dL), leucopenia (4.08x103/uL, 76% neutrophils, 14 % lymphocytes, 0.5% eosinophils, 0.3% basophils). A Positive IgG quantification for Herpes Virus 1-2, Varicella Zoster Virus and CMV (all with negative IgM quantifications and a negative viral quantification for CMV), his initial C reactive protein and procalcitonin levels were 160 mg/dL and 0.3 ng/dL, respectively. Treatment consisted in rehydration and plasmapheresis (#8 sessions using both 5% albumin and fresh frozen plasma, with an average processed volume of 6000mL) for 8 days. He received orals steroids with a 10mg dose of prednisolone for 15 days and empirical coverage with iv linezolid for 14 days. Nonetheless he presented bacteriemia and K. pneumoniae (a non-resistant strain) was isolated and treated successfully with a 7 day course of cefotaxime.

The skin lesions were painful and treated with vaseline gauze and chlorhexidine for the first week.

Once the exudation ceased, Nanogen (a biocellulose nano-structure matrix made from organic nano-fibre.) was applied on denuded areas, covered with a non-adherent dressing and in some areas leave it without secondary dressing. Spontaneous detachment of Nanogen occurs at 10 days with complete wound healing. The patient returned to normal values in his his leucogram (5860/uL), hepatic enzymes (ast: 34 mg/dL, ALT: 43) and bilirubin (total bilirubin: 0.97)

Patient was discharged from the ICU after 14 days, admitted to the gastroenterology ward to continue management for his inflammatory bowel disease.

Conclusions

The findings suggest that the use of biocellulose nano-structured matrix may provide a scaffold to enhance granulation and wound healing in patients with TEN. This dressing adapts very well to the face contour, including nose and ears, and genitalia. It protects the area against infection, reduce scar formation and due to the fast recuperation time, may reduce cost of treatment. A decrease in dressing changes, fluid losses and pain was obtained. The patient comfort increase and wound care was easily performed. Nanogen provide a very effective skin coverage helping to reduce pain and facilitating wound healing in a short period of time, without side effects and excellent tolerability

Around 7th day, the main complaint with the biocellulose dressing was face itching due to dryness of the dressing, and it detach around 10th day. Biocellulose dressing may be a useful adjunct in the management of TEN.

* ID,Wound Care Clinic ,**ICU, Anesthesiologist resident, ***ICU Specialist

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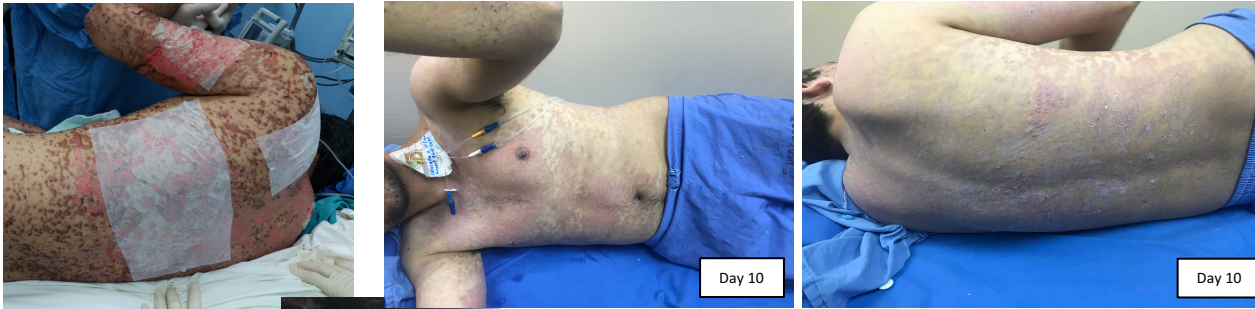
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BIOCELLULOSE NANO STRUCTURED MATRIX AS PRIMARY WOUND HEALING MODALITY MANAGING PARTIAL THICKNESS FACE BURNS

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Introduction

Several treatments have been used in local burn management. The aim of this case series is to describe the outcomes obtained using a biocellulose for second degree (superficial partial thickness) face burns. In 7 patients with superficial partial thickness face burns a biocellulose dressing was applied. Time to healing, length of stay (in the hospitalized patients)and complications were addressed.

Material and Methods

Data from 7 burn patients was collected. 6 inpatients and 1 outpatient. 6 patients were admitted at the Intensive Care Units at Hospital Mexico, Costa Rica and 1 patient was managed as outpatient. Outcome include time to complete healing. Demographic data, co-morbidities, concomitant medications, time to healing, length of stay and complications were addressed. Dressing Material A natural biocellulose nano structured matrix wound dressing with a bacterial and plant cellulose structure. The plant cellulose is sustainably harvested and the bacterial cellulose is derived from Acinetobacter Xylinum. This dressing is also a natural antimicrobial.¹

Results

Characteristics of the population are describe in table 1.

Of 7 patients evaluated 4 patients were male and the median age was 38 (15-75) years and 3 patients were female and the median age was 43 (32-54) Prior to biocellulose dressing 4 patients receive silver sulfadiazine with vaseline gauze and 3 patients fusidic ointment with vaseline. Mean duration prior to treatment was 2 days. All patients were surgically debrided if needed. All the patients had one application of the biocellulose. The median number of sheets (10 cm x10 cm) per patient was 1(1-2) No secondary dressing was applied in the face burns. On 6 patients pain relief was assessed and achieved after application. of the biocellulose dressing. One patient on ventilator support and sedated was unable to be assessed for pain.

All patients healed at interval 2-3 weeks. Healing took place at a mean 12 days. The median healing time (final wound closure) for burn patients treated with biocellulose was 10 (7-23) days. The median duration of hospital stay was 15 (4-22) days. The extent of burns as TBSA i (Total Body Surface Area) shown in table 1. Although patients had burns in other areas besides head and neck. Only face and neck areas were treated with the biocellulose dressing Patients received antibiotics unrelated to their burns. Complications cannot be attributed to the use of the biocellulose dressing

Limitations

A small sample size and the lack of a control group to compare outcomes. In order to have a solid evidence a randomized controlled trial is needed

Conclusions

The findings suggest that the use of a biocellulose may provide a scaffold to enhance granulation and wound healing in burn patients. This dressing adapts very well to the face contour, including nose and ears, protects the area against infection, reduces scar formation and due to the fast recuperation time, may reduce cost of treatment. Around 7th day, once patients were without ventilator support, the main complaint with the biocellulose dressing was face itching due to dryness of the dressing.

Biocellulose dressing may be a useful adjunct in the management of second degree face burns. We speculate that it may also be theraputic to apply after face dermatological procedures such as facial peeling

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CASE SERIES



Patient	Face Burn Degree**	TBSA*	Age	Sex	Time to complete healing (Days)	Hospital length stay (Days)	Complications
1	2nd	10,5	32	F	23	4 outpatient visits	None
2	2nd	31,5	54	F	14	22	Died (IH Pneumonia)
3	2nd	13,5	15	M	7	10	None
4	2nd	24,5	55	M	10	15	None
5	2nd	44		M	10	20	Bacteremia S Aureus. Fungemia
6	2nd	41,5	21	M	7	11	Died (Hypovolemic shock in surgery)
7	2nd	32,5	75	M	10	16	None

*Face involvement in all patients was 4,5 TBSA
** Patients 1-5 had also 2nd degree burns in chest and extremities. Patients 5 and 6 had 3rd degree burns in chest and extremities

BIOLOGICAL INTERFACE ON NPWT AS WOUND TREATMENT IMPROVEMENT

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Co authors: Kathleen Leak, Wound care specialist
Sue Jonhson, Nurse consultant.

BACKGROUND

In simple terms, NPWT refers to any device that seals the wound creating a near airtight environment. It is connected to a vacuum source that generates and maintains a hypobaric treatment atmosphere that stimulates cicatrization⁽¹⁾ Application of a vacuum on a wound accelerates the growth healing tissue and vessels, and promotes border contraction. In addition to isolating the exterior injury, the vacuum maintains an environment of ideal moisture and temperature. Four main mechanisms are accepted as the variables for this clinical advantage. Although there are discrepancies between the physical mechanisms of action of NPWT, the clinical results and therapeutic benefits are clear in daily practice. Hemicellulose dressing is a vegetal membrane that is derived from natural plant ingredients which contain vitamins, pro healing factors (vitamins, Usnic acid, Acetic acid, Lactic acid, Chatequins, Betaglucon, Polysacharides) and fibres of nanometric length⁽²⁾. NPWT application does present some limitations regarding wound bed properties as presence of devitalized tissue. Limitations regarding extending time up to 5 days between dressing changes are: fluid accumulation, odor, tissue tear and pain during dressing removal.

AIM

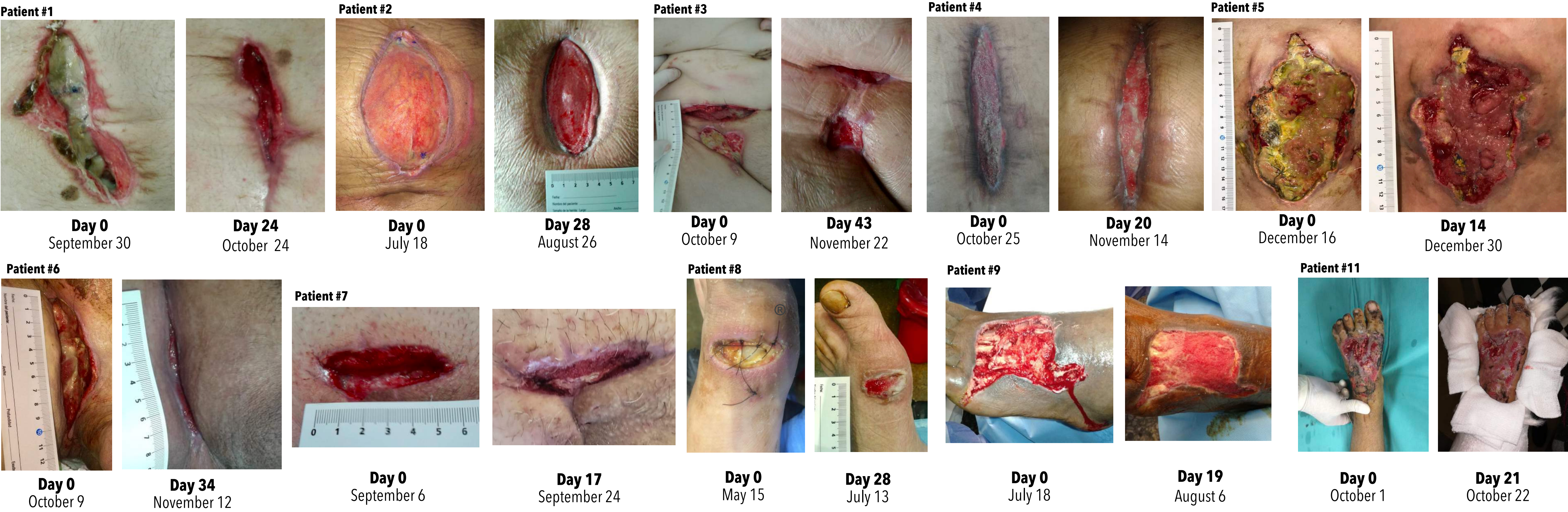
To set up a dynamic treatment environment, that promotes wound healing and adequate exudate management. Combining physical benefits from NPWT with pro healing factors and scaffold action of Hemicellulose dressing in order to accelerate wound healing and decrease cost of application, and also decrease dressing change rate, and human and material resources. This method also requires a presence of more than 50% of devitalized tissue.

METHOD

Dynamic treatment area where the wound bed interacts with natural substances, under a vacuum ambient with fluid removal. Dressing changes were performed at institutions or patient homes according to the patient needs and resources.

CASE SERIES

15 wounds of different origins were treated: Surgical dehiscence 6 wound (5 patients), Loss of substance (LOS) secondary to soft parts infection: 7 wounds (5 patients) and Acute trauma: 2 wounds (2 patients). Patients # 3,6,7 9,10 are diabetic. The resolution of the wound was programmed in two steps: first step with NPWT until the conditions were adequate to close the gap with a skin graft or rotate into AWC.



Patient	Sex	Age	Pathology	Localization	Wound Measurements (prior therapy)	Wound Measurements (after therapy)	Size Reduction	Tissue (Beginning)	Tissue (End)	NPWT treatment time	Dressing changes
1	Male	77 Years old	Surgical dehiscense	Abdomen	Width 2,5 Cm / Length 8 Cm / Deepth >2,5 Cm	Width 0,8 Cm / Length 5,6 Cm / Deepth 1 Cm	50 Cm3 - 4 Cm3= 92%	Slough 85%	Granulation 100%	24 Days	5
2	Male	64 Years old	Surgical dehiscense	Abdomen	Width 6 Cm / Length 11,5 Cm / Deepth <1 Cm	Width 4 Cm / Length 9 Cm / Deepth <1 Cm	69 Cm3 - 36 Cm3= 48%	Atrophic granulation 100%	Granulation 100%	28 Days	5
3	Female	65 Years old	Surgical dehiscense	Pubis	Width 6 Cm / Length 4,5 Cm / Deepth <0,5 Cm	Width 2,5 Cm / Length 2 Cm / Deepth <0,5 Cm	27 Cm2 - 5 cm2= 82%	Slough75%	Granulation 100%	43 Days	8
	Female	65 Years old	Surgical dehiscense	Abdomen	Width 2,5 Cm / Length 10 Cm / Deepth 3 Cm	Width 0,5 Cm / Length 3,5 Cm / Deepth 0,5 Cm	75 Cm3 - 0,85 Cm3 = 98%	Granulation 0%	Granulation 100%	43 Days	8
4	Male	57 Years old	Surgical dehiscense	Sternal	Width 4 Cm / Length 12 Cm / Deepth >1,5 Cm	Width 1,5 Cm / Length 11,5 Cm / Deepth 0,5 Cm	72 Cm3 - 8, 6 Cm3 = 88%	Fibrine 45%	Granulation 100%	21 Days	4
5	Male	4 Years old	Surgical dehiscense	Abdomen	Width 10 Cm / Length 17 Cm / Deepth 1 Cm	Width 8 Cm / Length 12,5 Cm / Deepth <1 Cm	170 Cm3 - 100 Cm3= 41,7%	Slough 95%	Granulation 100%	14 Days	3
6	Male	59 Years old	LOS	Groin	Width 4 Cm / Length 12 Cm / Deepth >6 Cm	Width 0,4 Cm / Length 5 Cm / Deepth NO	288 Cm3- 2 Cm2= 99%	Granulation 0%	Granulation 100%	34 Days	7
7	Male	55 Years old	LOS	Pubis	Width 2 Cm / Length 5,5 Cm / Deepth 2 Cm	Width 0,5 Cm / Length 3 Cm / Deepth 0,5 Cm	22 Cm3-0,75 Cm3= 96%	Granulation 0%	Granulation 100%	21 Days	4
	Male	55 Years old	LOS	Testicle	Width 4 Cm / Length 6 Cm / Deepth 1 Cm	Width 3 Cm / Length 4 Cm / Deepth <0,5 Cm	24 Cm3-0,6 Cm3= 97,5%	Granulation 0%	Granulation 40%	5 Days	1
8	Male	22 Years old	LOS	Left toe	Width 0,8 Cm / Length 3,5 Cm / Deepth 1 Cm	Width 0,2 Cm / Length 0,5 Cm / Deepth NO	2,8 Cm3- 0,1 Cm2= 96%	Bone exposition	Granulation 100%	35 Days	7
	Male	22 Years old	LOS	Right toe	Width 0,8 Cm / Length 3 Cm / Deepth >2 Cm	HEALED	100%	Bone exposition	Granulation 100%	28 Days	5
9	Male	39 Years old	LOS	Back of foot	Width 6 Cm / Length 8 Cm / Deepth 1 Cm	Width 5,5 Cm / Length 7 Cm / Deepth NO	48 Cm3 - 41 Cm2= 15%	Tendon exposition	Granulation 100%	19 Days	4
10	Male	52 Years old	LOS	Back of foot	Width 2,5 Cm / Length 4 Cm / Deepth >2 Cm	Width 0,5 Cm / Length 3,5 Cm / Deepth NO	20 Cm3- 1,75 Cm3= 91,2%	Slough 60%	Granulation 100%	35 Days	7
11	Male	13 Years old	Acute trauma	Back of foot	Width 2,8 Cm / Length 4 Cm / Deepth >2 Cm	Width 1,5 Cm / Length 2 Cm / Deepth NO	22,4 Cm3- 3 Cm2= 87%	Bone and tendon exposition	Joint covered 100%	21 Days	4
12	Male	36 Years old	Acute trauma	Neck and shoulder	Width 8 Cm / Length 17 Cm / Deepth >3 Cm	Width 7 Cm / Length 16 Cm / Deepth <2 Cm	408 Cm3 - 168 Cm3= 58%	Granulation 0%	Granulation 100%	14 Days	2

RESULTS

Dressing changes every 5 days allowed qualitative wound assessment and quantitative measurement to compare outcomes. According to the clinical findings, the results have shown properties that enhance and balance the biome in order to accelerate wound closure: Autolytic debridement, fibroplasia. Fibroplasia: Accelerate tissue regeneration and vascularization. All the wounds had a satisfactory response with growth of granulation tissue to fill the loss of substance. Patients N° 7,8,9 presented joint structures exposed. On all three patients, the coverage occurred after 3 weeks of application. Autolytic debridement: Patients # 1,3,4,5 and 10 present more than 50% of non viable tissues prior to the beginning of treatment. After the first dressing change there was evidence of decreased adhesion of non-viable tissues to the wound bed. Devitalized tissues as fibrine or necrotic material is easily removed with a hand clip during dressings change. The application of a biological contact layer allowed for the maintenance of the same dressing for up to 5 days avoiding pain and bleeding during dressings change. No leak or loss of vacuum occurred. No patient reported inconveniences or allergies. All the wounds evolved positively, allowing to simplify the the approach and rotate to AWC. Patient #9 required a skin graft to close the gap.

CONCLUSION

Based on the results from the presented clinical case study observation, it appears that the adhesion of a biological layer under a negative pressure treatment worked synergistically to stimulate fibroplasia, autolytic debridement and balance the biome in order to accelerate wound closure. Every time the wound bed is exposed to the exterior, a latency period takes place, slowing healing until the ambient conditions are adequate again. The vegetal layer does not interfere with the fluid removal, allowing for extended time between dressings changes. This is a benefit of the system (reduced human and material resources) and also for the patient, providing more comfort. Provide a more efficient atmosphere of treatment that overcomes the limitations and results of NPWT alone. Better results will decrease the total time of use, improving the way that we use this tool.

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THANK YOU TO GENADYNE BIOTECHNOLOGIES FOR PROVIDING THE HEMICELLULOSE MEMBRANE (NANOGEN AKTIV®) AT NO COST TO THE PATIENTS.





Veilige oplossingen voor Wondgenezing en Infectiebestrijding

BIOLOGIQ NIEUWSBRIEF JUNI 2015

Nieuwe inzichten:

combi Nanogen Aktiv + Nanogen Aktigel meest effectief - én kostenefficiënt

Er komt steeds meer inzicht in de effectiviteit en kostenefficiëntie van de nog relatief nieuwe systeemcombinatie Nanogen Aktiv en Nanogen Aktigel.

Afgelopen maand zijn de productspecialisten van BiologiQ bijgeschoold en bijgepraat over de ervaringen met Nanogen in landen die Nederland vóór gingen.

Zo verzorgde Nanogen-pionier dr. Naz Wahab (University Medical Center, Las Vegas, VS) een training voor het BiologiQ-team. Zij legde veel nadruk op het in combinatie gebruiken van Nanogen Aktigel en Nanogen Aktiv wond-dressings. Juist die combinatie zorgt voor een aanzienlijke versnelling van de wondheling, door de gelijktijdige intensieve werking van binnenuit en van buitenaf. Eerst dient de Aktigel te worden aangebracht. Deze trekt na ongeveer 4 minuten in het weefsel om daar langdurig actief te blijven. De over de wond geplaatste Aktiv sheet geeft vervolgens van buitenaf de werkzame stoffen af. Tevens fungeert de Aktiv als een matrix voor celmigratie. BiologiQ productspecialist Rob de Klijn: "Je kunt bijna spreken van een 1 + 1 = 3 effect".

Nederlandse wondverpleegkundigen enthousiast

Intussen is Nanogen ook in Nederland bezig aan een snelle opmars. Rob: "Ik hoor bijna alleen succesverhalen. Ook vernemen wij vanuit de markt dat er tussen wondverpleegkundigen onderling al volop over gesproken wordt – in positieve zin."

Monique van Gerwen, wondconsulente in het Maxima Medisch Centrum in Eindhoven/Veldhoven, drukt het zo uit: "Bij complexe wonden zie ik met Nanogen Aktiv en Nanogen Aktigel duidelijk een verbetering in de wondgenezing en versnelling van het helingsproces." Waaraan Rob toevoegt:



Groen én kostenefficiënt

Uit Groot-Brittannië, waar Nanogen al eerder was geïntroduceerd, komen vergelijkbare geluiden. In een

recente poster over Nanogen met de veelzeggende titel *Going Green – The Natural Way Using Plant Stem Cells*, besteden twee Britse wondverpleegkundigen aandacht aan het kostenaspect. Voor een groot aantal wondsoorten berekenen zij precies de besparing die een behandeling met Nanogen kan opleveren in relatie tot meer traditionele (en vaak niet effectieve) wondtherapieën. Ook rapporteren zij dat patiënten na één behandeling met Nanogen Aktiv zélf gingen vragen om het product, omdat zij snel na het aanbrengen van de sheet veel minder pijn voelden. Het nieuws verspreidde zich snel, wat ertoe leidde dat zelfs patiënten die nog niet met Nanogen werden behandeld om 'dat toverpapiertje' vroegen, een verwijzing naar het dunne Nanogen Aktiv membraan. De Britse wondprofessionals concluderen dan ook dat Nanogen Aktiv "een significant effect heeft op het kickstarten van moeilijk of niet genezende wonden." Daarnaast noemen zij Nanogen 'onbetwistbaar kostenefficiënt' en roemen zij de aanmerkelijke verbetering in de leefkwaliteit van patiënten, die soms al lange tijd hebben geworsteld met wonden die niet reageren op standaard behandelingen.

De poster is inmiddels toegevoegd aan het BiologiQ Kenniscentrum (HOME -> Nanogen -> Kenniscentrum).



Nieuw: online 'Larval Academy' voor wondprofessionals

Sinds kort kunnen Nederlandse artsen, verpleegkundigen, podotherapeuten en andere wondzorgprofessionals hun kennis van LDT Larventherapie verdiepen met een kosteloze online cursus aan de nieuwe Larval Academy.

Via diverse e-Learning modules kunnen cursisten zich vertrouwd maken met alle aspecten van LDT (Larval Debridement Therapy). Bijvoorbeeld het gebruik van LDT als methode voor biologisch debridement, hoe en waarom LDT effectief is, welke wonden ervoor in aanmerking komen en de communicatie over LDT met patiënten en collega's. De cursus wordt gegeven in het Engels, is samen- ...



[Lees verder op de volgende pagina >](#)

Veilige oplossingen voor Wondgenezing en Infectiebestrijding

BIOLOGIQ NIEUWSBRIEF JUNI 2015

Vervolg >

.. gesteld door deskundigen op het gebied van LDT en kan worden afgesloten met een certificaat. In Groot-Brittannië levert een afgeronde deelname aan de Larval Academy al verpleegkundige accreditatiepunten op. Het is nog niet bekend of dit ook gaat gelden voor Nederlandse cursisten.



Geïnteresseerden in kosteloze deelname aan de online Larval Academy cursus kunnen zich opgeven bij Hans Willemsen, BiologiQ, tel. 055 – 368 44 50 of via de BiologiQ productspecialist voor hun regio.

Minder zorginvesteringen in 2014



Vorig jaar investeerden Nederlandse zorgorganisaties ruim 42 procent minder dan in 2013. Dat blijkt uit het jaarverslag over 2014 van het Waarborgfonds voor de Zorgsector (WFZ).

In 2013 verleende het WFZ nog voor 754 miljoen euro aan garanties, in 2014 nog maar voor 436 miljoen euro. Daarnaast was ook het totaal van alle uitstaande garanties met 2,2 procent teruggelopen van 8.695 miljoen euro in 2013 naar 8.506 miljoen euro in 2014.

Een opvallende trendbreuk, want sinds de oprichting van het WFZ in 1999 was de garantie-omvang elk jaar toegenomen. Dat het minder gaat in de zorg blijkt ook uit het hogere aantal zorginstellingen dat onder financieel toezicht staat. Het WFZ noemt twee oorzaken: de onzekere (ook financiële) vooruitzichten in de zorg en een kritischer houding van de banken én het WFZ ten aanzien van investeringsplannen en leningaanvragen.

Het WFZ is een overheidsinstantie die garanties afgeeft voor leningen aan zorgorganisaties, waardoor deze als regel goedkoper kunnen lenen op de geldmarkt. Daarnaast heeft het WFZ tot taak te waken over de continuïteit van de zorgfinanciering en daarmee indirect van de zorgverlening. Ook probeert het WFZ het financieel management bij de zorginstellingen te verbeteren.

Bron: wfz.nl

Totaalconcept in Actief Wond Management

Het Wond Management Systeem van BiologiQ bestaat uit innovatieve bio-actieve oplossingen, gericht op het stimuleren van het eigen regeneratief vermogen van het lichaam en gebaseerd op een toenemend inzicht in de biologie van de (complexe) wond.

Granulox nu ook verkrijgbaar in België

Dit voorjaar is Hospithera, de Brusselse leverancier in medische hulpmiddelen en partner van BiologiQ in België, gestart met de verkoop van Granulox.

Evenmin als in Nederland komt het product daar voor vergoeding in aanmerking, maar Belgen zijn veel meer gewend zelf te betalen voor effectieve middelen. Gezien de zeer positieve ervaringen met Granulox in Duitsland en Nederland voegde Hospithera het product graag toe aan het leveringsgamma. Om dezelfde reden opende BiologiQ vorige maand een direct online verkoopkanaal voor Granulox in Nederland, waar behandelaars en patiënten rechtstreeks de Granulox hemoglobinespray in 6ml spuitflacon bestellen.

Kleinere Granulox 6 ml verpakking.

Nu online te bestellen op de BiologiQ website

De BiologiQ website www.biologiql.nl is onlangs uitgebreid met een 'button' WEBSHOP, te vinden linksboven op de homepage.

De Granulox webshop is voorzien van bestel- en betaal instructies. Het product wordt helaas op dit moment niet vergoed door de Nederlandse zorgverzekeraars.



www.BiologiQ.nl > WEBSHOP

Oxzyyme 5 x 6,5cm dressings tijdelijk niet leverbaar



Archimed, de Britse producent van Oxzyyme en Iodozyyme, laat weten dat de Oxzyyme wonddressings voorlopig niet leverbaar zijn in het formaat 5 x 6,5 cm.

Geadviseerd wordt gebruik te maken van de 10 x 10 cm Oxzyyme dressings in 5-stuksverpakking. Deze is ruim op voorraad en normaal leverbaar.

Lees verder op de volgende pagina >

Zorgkosten licht gestegen in 2014



Eind vorige maand kwam het CBS met de jaarlijkse 'kerncijfers' voor de zorguitgaven. Daaruit blijkt dat de medische zorg ons in 2014 bijna twee procent (1,8%) méér kostte dan in het jaar daarvoor.

Die stijging is vooral toe te schrijven aan hogere uitgaven aan de huisarts, welzijn en maatschappelijke diensten. De kosten voor geneesmiddelen bleven gelijk. In totaal gaf Nederland in 2015 bijna 95 miljard euro uit aan de zorg, wat neerkomt op 5.630 euro per persoon: 79 euro méér dan in 2013. Uitgedrukt als percentage van ons bruto binnenlands product (bnp) lopen we daarmee aardig in de pas met omringende landen als België, Duitsland en Frankrijk. De bescheiden stijging betekent een voortzetting van de trend naar minder explosieve kostenstijgingen, die vanaf 2008 zichtbaar is. Het op kostenbeheersing gerichte beleid lijkt dus (enig) effect te hebben. Met een plus van 6 procent waren de huisartsenpraktijken vorig jaar de grootste stijgers qua kosten. Dat is echter voor een flink deel te verklaren uit een verplaatsing van zorgaanbod (o.a. ggz-praktijkondersteuning) van ziekenhuizen en specialisten naar de eerstelijnszorg. Daarnaast gingen de huisartstarieven omhoog. De uitgaven aan ziekenhuizen en medische specialistenpraktijken stegen in 2014 met 2,1 procent. Deze kostenpost was goed voor 26 miljard euro, iets meer dan een kwart van de totale zorguitgaven.

Bron: cbs.nl

BiologiQ zet groot in op Nanogen

De gunstige ervaringen met Nanogen en de positieve manier waarop zowel Nanogen Aktiv als Nanogen Aktigel worden ontvangen door wondzorg-professionals waren aanleiding voor BiologiQ om de ondersteuning op een hoger plan te tillen.



Deze maand ging een advertentiecampaagne van start met plaatsingen in zowel het WCS Nieuws als het Nederlands Tijdschrift voor Wondzorg (NTVW). De campagne bestaat uit vier verschillende vakbladadvertenties, waarin steeds een andere casus wordt beschreven, variërend van een veneuze

Nieuw deze maand in het Kenniscentrum:

* Leak K & Johnson S, Going Green – *The Natural Way Using Plant Stem Cells*, Poster, Doncaster and Bassetlaw Hospitals/NHS Foundation Trust, 2015

ulcus tot een chirurgische wond. Tevens werd de nieuwe Nanogen productbrochure (6 pagina's) als bijlage meegezonden met de laatste aflevering van het WCS Nieuws, dat deze week bij tegen de 2.000 wondzorgprofessionals op de mat viel. Behalve informatie over werking en toepassing van beide Nanogen producten en de noodzakelijke productinformatie, bevat de brochure een korte beschrijving van het voorspoedige behandelverloop met Nanogen van uiteenlopende wonden die eerder niet of slecht reageerden op andere therapieën.

Zorgwerkers mogelijk recht op achterstallige ORT



Ziekenhuispersoneel en werkers in andere zorginstellingen hebben mogelijk jarenlang te weinig onregelmatigheds-toeslag (ORT) uitbetaald gekregen, stelt vakbond NU'91.

Dit naar aanleiding van een recente uitspraak door de rechtbank Den Haag. De bal was aan het rollen gebracht door een verpleegkundige van het Haga Ziekenhuis, die met terugwerkende kracht ORT opeiste over alle perioden dat zij met vakantie of verlof was. De rechter gaf haar gelijk op grond van een eerdere uitspraak van het Europese Hof van Justitie. Daarin werd geoordeeld dat de ORT gezien moet worden als onderdeel van het salaris en dus doorbetaald moet worden tijdens vakantie en verlof. Omdat Nederland een EU-land is, acht de Nederlandse rechter de Europese uitspraak ook van toepassing op ons land. Het Haga werd veroordeeld tot betaling van de achterstallige ORT over vijf jaar. Als de uitspraak overleefd blijft en alle betrokken zorgwerkers een soortgelijke claim gaan indienen, zou het de zorgwerkgevers minstens 150 miljoen euro kunnen kosten, becijferde NU'91. In een later bericht op de eigen website benadrukt NU'91 dat het aan individuele zorgwerkers is om eventuele achterstallige ORT te claimen; er is dus geen sprake van een collectieve actie. Er kan ook alleen achterstallige ORT worden geclaimd over de vijf jaar voorafgaand aan 1 januari 2015. Op die datum ging de nieuwe cao ziekenhuizen in, waarin de ORT tijdens verlof wél is geregeld.

Bron: nu91-leden.nl

Congresagenda

Tot na de zomer staan er geen vakbijeenkomsten op de agenda waarop BiologiQ is vertegenwoordigd.

www.BiologiQ.nl Omdat de wonden de wereld nog niet uit zijn

A Changing World for Patient Support: Our Clinical Experiences with the Magic Paper

Lead Contact and Lead Author: Kathy Leak, Wound Care Specialist,
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Co-Author: Sue Johnson
Doncaster and Bassetlaw Hospitals NHS Foundation Trust

Introduction

Moist wound healing has been proven to heal the majority of chronic wounds at minimal cost to the health system. Posnett et al (2008) showed that over 80% of chronic wounds would heal within a predicted timeframe at an average cost to the system of around £1900, whilst a small number of wounds prove hard to heal costing between £31,000-£42,000 to heal. In 2014, we were approached by Genadyne Pharma (Aspen Medical) to test their new Nanogen Nano-structured Bio-cellulose matrix range of products. The challenge was to use it on our most difficult wounds. Once we had tried the product and saw that it stimulated the healing of a very difficult ‘static’ wound, we decided to expand the usage and to undertake an evaluation on 20 patients, all with hard-to-heal chronic or complex wounds. Nanogen is a plant based collagen, manufactured from plant extracts, that have the ability to mimic the Extra Cellular Matrix (ECM) in the wound. Nanogen functions in the same way as other collagen based products to stimulate fibroblast and cellular migration and encourage the deposition of newly formed tissue ie granulation. The other components in Nanogen; Vitamin B,C,D,E,K; Biotin and Folic acid are used as enzyme substrates that are catalysts in many biochemical processes in the healing of wounds. Because of the nanometric sized particles, there is an added benefit of cell signalling to the natural microcellular environment.

Methodology

Twenty patients with non-healing wounds of at least 6 months duration were entered in to a four week evaluation using Nanogen Aktiv. After a full patient assessment including wound assessment and photography the wound was dressed with Nanogen Aktiv and an appropriate secondary dressing (chosen by nurse). The patient was advised to change the secondary dressing after 3 days without disturbing the Nanogen Aktiv membrane. After the initial 4 week period the wounds were dressed with appropriate moist wound healing product. Some patients then experienced deterioration in their wounds and therefore the clinicians chose to continue with the Aktigel alongside the MWH products until healing was complete.

Results

Previous treatment (20 Wounds)		Treatment with Nanogen (18 Wounds)*		
Average time ‘open’	75 weeks	Average time treated	Nanogen Aktiv and Nanogen Aktigel	6 weeks
			Nanogen Aktigel and MWH only	5 weeks
		Total time to heal		11 weeks
Average cost to treat to date	£11,168	Average cost to heal		£1,736
*Two patients excluded - one because a nurse wrongly suspected a reaction at week 2 (excluded from trial but went on to heal with Nanogen, and one due to patient concordance issues.		Saving compared to cost to date		£9,432

Results continued...

The new treatments proved to be unambiguously cost-effective and had a positive impact on patient quality of life. After successfully healing 2 static wounds on a patient, whilst she went through a course of chemotheraepy, we recieved this text:
“I’m going to miss you all so much; I shed a tear when I got to the car. You’ve got me through the worst time of my life and my husband and I will never be able to thank you enough”
The impact on the patient’s quality of life was amazing, she was able to carry on working throughout cancer treatments meeting government set targets.



Venous Ulcer +2 years duration.



Healing achieved at week 11 of treatment with Nanogen Aktiv. The Aktigel was used after healing to remove the last of the flaky skin.



Breast wound after 4 weeks of NPWT - now stalled. Placed in Nanogen Aktiv and started chemotherapy.



Wound healed in 6 weeks with strong health scar line present.

Discussion

The application of Nanogen Aktigel to the Peri-wound area resulted in a pinker, healthier, more robust peri-skin. Even after just one week of treatment with Nanogen Aktiv the wound usually changes in colour, size and increase in exudate, giving confidence that the wound is responding to the treatment, even in wounds that have been static for months. Patients can also see this obvious improvement which gives hope to those who had lost it. After the first application of Nanogen Aktiv membrane most patients reported a rapid reduction in wound pain, so much so that many patients requested to continue with the Nanogen Aktiv treatment fearing that wound pain would return. One patient demanded to have treatment with the ‘Magic Paper’. When asked why the call it that, the patient said “that’s what the other patients call it, they told me that when they had it put on them, it quickly got rid of the pain and was healing their wounds for the first time in years”.

Conclusion

Nanogen Aktiv does have a significant effect on kick starting hard to heal (non-healing) wounds, that previously had a history of only being maintained. It mimics the wound ECM and stimulates epithelialisation and improves inter cellular signalling/communication, both of which have been shown to be critical in stimulating the healing of stalled chronic wounds. It is unequivocally cost-effective, healing wounds as opposed to maintaining wounds. In practice we have found that a two week course of Nanogen Aktiv followed by the Nanogen Aktigel proves most effective for healing with the added benefits of a better cosmetic result. It improves patient concordance by reducing pain and providing hope to patients who have endured these chronic wounds for excessive periods of time. This has a massive positive impact on the quality of life of these patients.

Accelerated Healing Inspired by Nurturing Nature

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Aim

To provide a simple wound healing solution that could be used to stimulate non-healing wounds. Ideally this solution would be utilised with conventional dressings, by either clinical staff or the patients, require minimal training and be administered across all healthcare settings.

Method

New to the wound care market is a simple gel made from natural plant extracts that stimulates extra cellular matrix (ECM) formation. It has been shown to stimulate the healing process in chronic wounds ¹. This gel was easy for the both patients to apply. Case Study 1 applied a few mls to the wound bed at each dressing change and continued with the foam dressings. Case Study 2 applied a few mls daily after showering with a secondary dressing of simple gauze.

Results

	Case Study 1	Case Study 2
Week 1	2cm x 0.5cm	2cm x 1.1cm
Week 2	1cm x 0.5 cm	1.8cmx 1cm
Week 3	0.5cm x 0.1 cm	1.5cm x 1cm
Week 4	Healed	1.1cm x 0.5cm
Week 5	-	0.5cm x 0.3 cm
Week 6	-	Healed

Conclusion

The change in both wounds was seen by both patient and clinician immediately. Both patients were living with wounds that were considered chronic / static in nature. Both patients felt their quality of life being impacted negatively by the presence of the wounds. Both wounds responded very positively to this treatment. All wound care clinicians struggle with complex non- healing wounds, advanced treatments and ECM stimulants can be expensive and complex to use. This simple gel can be used with conventional dressings and proved to be both successful and cost effective.

Reference:
¹ K & Johnson S. Going green: using a bio-cellulose membrane for patients with chronic non healing wounds. British Journal of Nursing Vol 24 No 20 TV supplement.

Case Study 1

Case Study 1 is a 48 year old gentleman with a non- healing abdominal wound following renal transplant (2009). The wound initially healed, leaving a large scar. After transplant, following a gain in weight, his trouser belt started to rub against his abdominal scar, it broke down and he developed a chronic wound (December 2015). He enjoyed swimming, therefore the wound impacted on his ability to exercise and his quality of life. He worked full time so it was important that he could continue to do the dressing himself, rather than visiting a clinic. Foam dressings were applied; he was self-caring. In May 2016, the patient attended a vascular clinic for a review of his disused arm fistula from previous dialysis. Initially the vascular surgeon wanted to refer to the Plastic Surgeons for skin grafting, luckily the Vascular Specialist Nurse team were on hand and made a conservative suggestion prior to grafting. They had been introduced to the gel recently. The patient was then seen on a weekly basis and did his own dressings in between, adding 2-3 drops of gel to the wound bed allowing it to soak in and then a secondary adhesive foam dressing. The wound healed within 3 weeks. He is now able to return to swimming.



Image1:



Image 2:



Image 3:



Image 4:

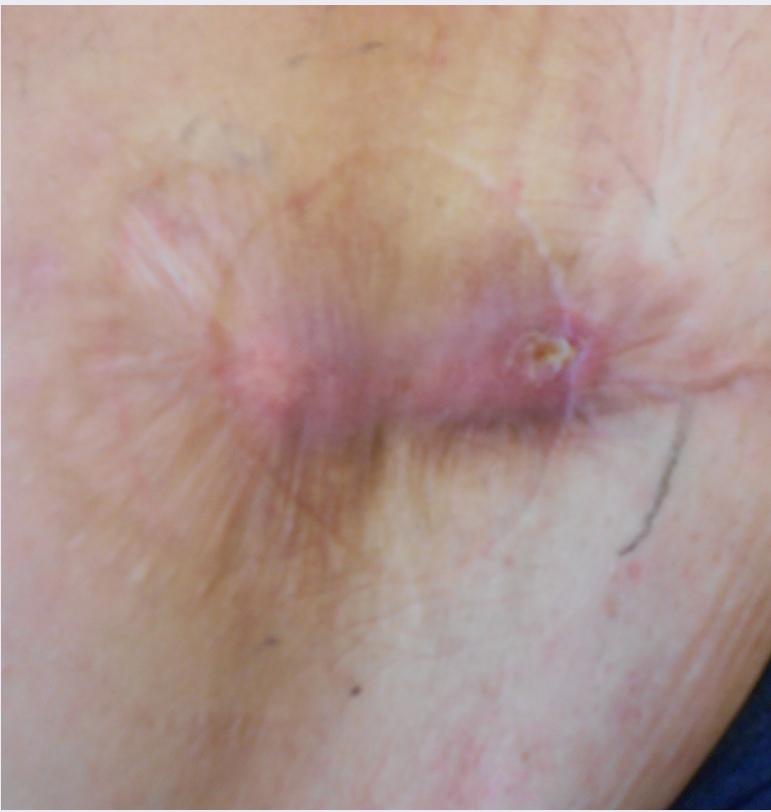


Image 5:

Case Study 2

Case Study 2 is a 24 year old male referred to the clinic for a non healing surgical wound which had been present for 5 months. He had no previous medical history and was a generally fit and well young man. In March 2016, he had an excision and drainage of a pilonidal sinus. Again, the patient was self caring and working full time. Due to the complex position of the wound he was unable to keep a dressing in place therefore, it was important to him that he could shower daily. The gel fitted perfectly with his lifestyle as he just added a couple of drops to the wound bed after each shower. The wound started reducing in size immediately after the gel commenced and healed within 5 weeks.



A complex area to dress

Histological findings with bio-cellulose gel and a bio-cellulose nano-structured matrix after laser ablation of queloid lesion in two patients

Authors: Jorge Elizondo, MD; Rodolfo Suarez, MD. Hospital Mexico, San Jose, Costa Rica

Background

The improved understanding of the physiology of wounds and the processes involved in wound healing has resulted in a change of understanding as regards the wound environment and healing.

Previous non-healing wounds were assumed to have a deficiency in the epithelial cells, it is now accepted that it more a problem of a deficient or non-existent extra cellular matrix (ECM) which is the major issue in static non healing chronic wounds.

Histological findings with a novel hemicellulose membrane and a fiberpolysaccharide gel made of plant stem cells with a nano-fiber delivery system, after laser ablation is described

Methods

A natural bio-cellulose gel and a bio-cellulose nano-structured matrix wound dressing was evaluated in two patients with 2 queloid lesion each one. They were debrided by a no fractional CO2 laser. In one lesion a bio-cellulose gel and a bio-cellulose nano-structured matrix dressing was applied to the cleansed wound site and the other one was covered with vaseline gauze. A sterile gauze with 2-3 dressing changes per week was applied. Biopsies were taken from both lesion after laser ablation, at 48, 96, and 168 hours. The wound was observed closely for any signs of healing initiation and epithelialization and hematoxinilin eosin process performed for the biopsies.

Results

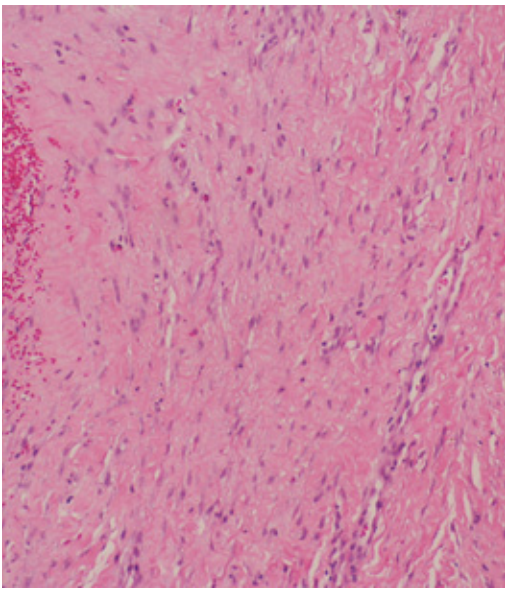
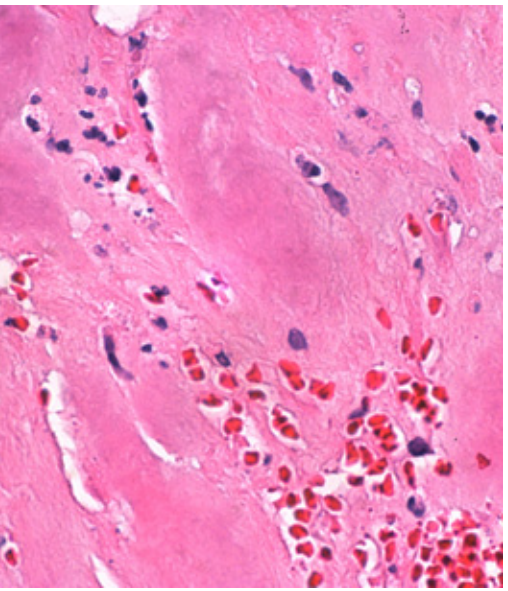
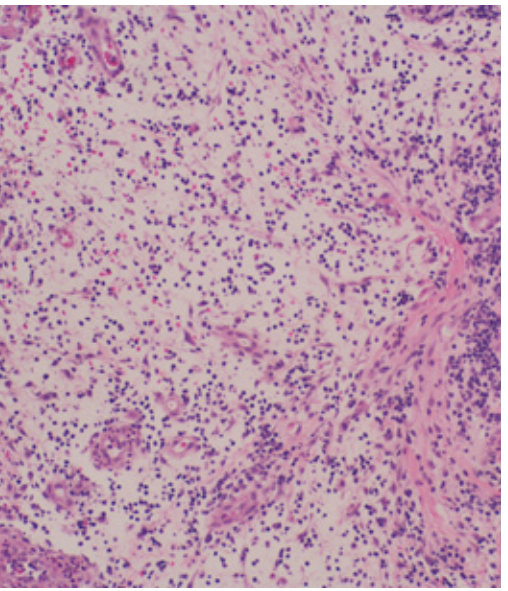
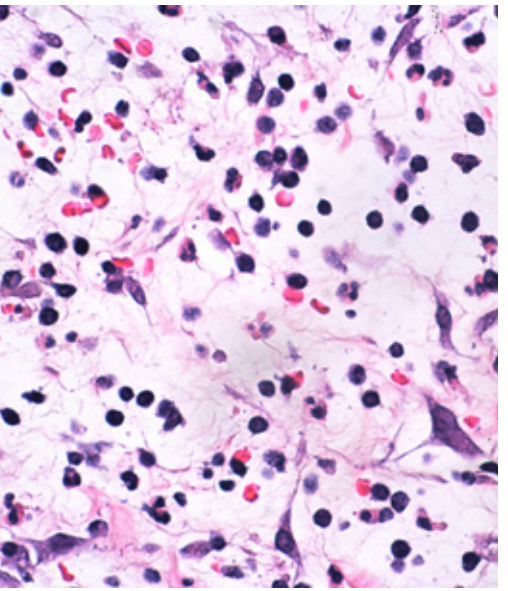
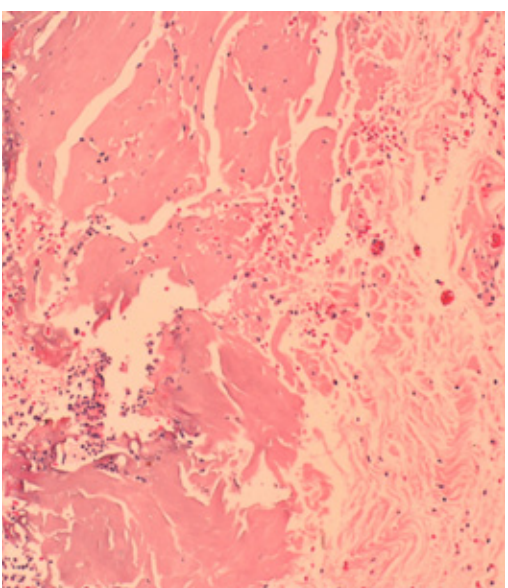
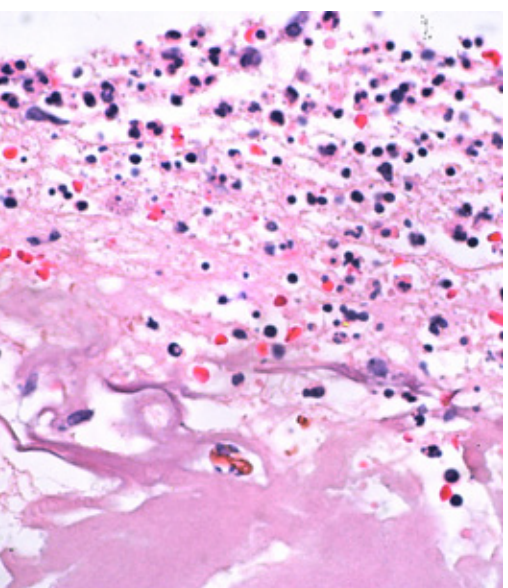
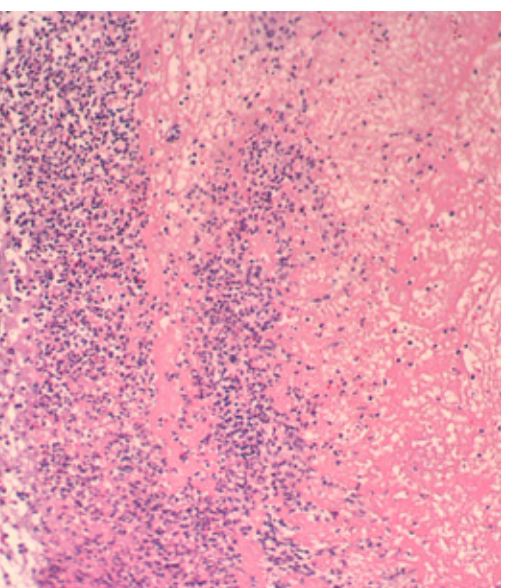
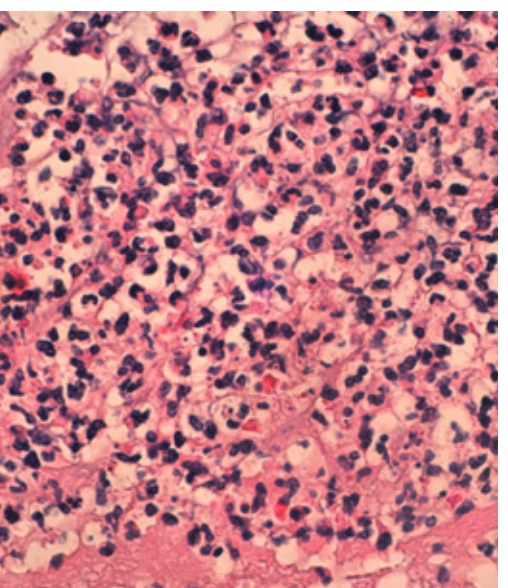
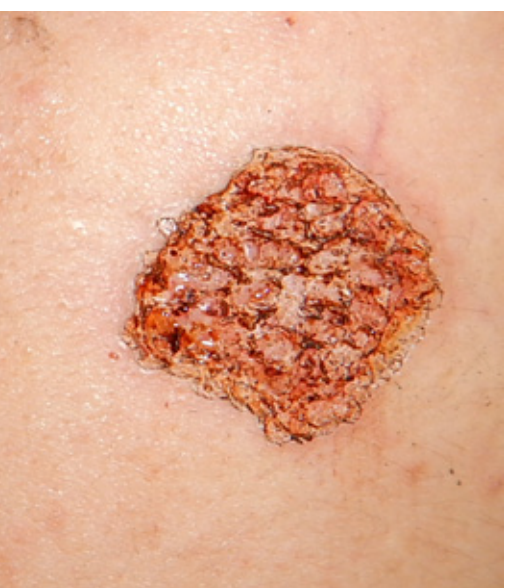
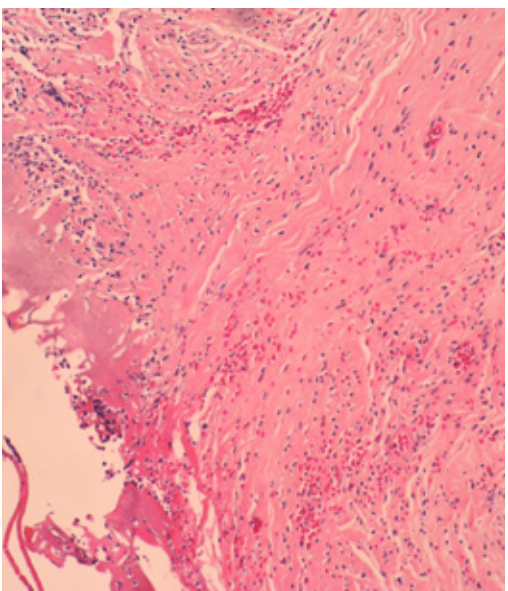
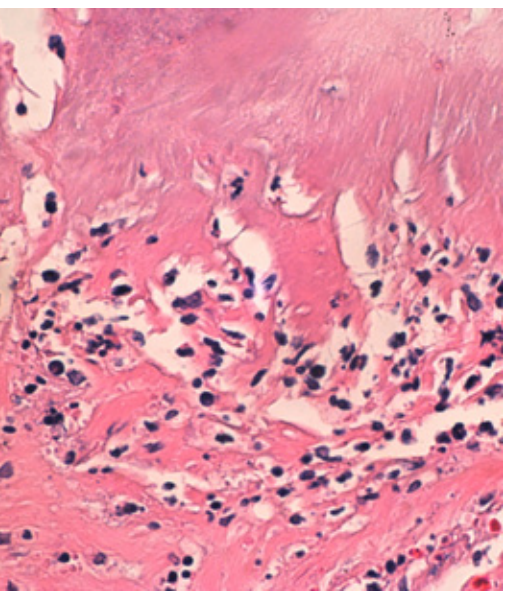
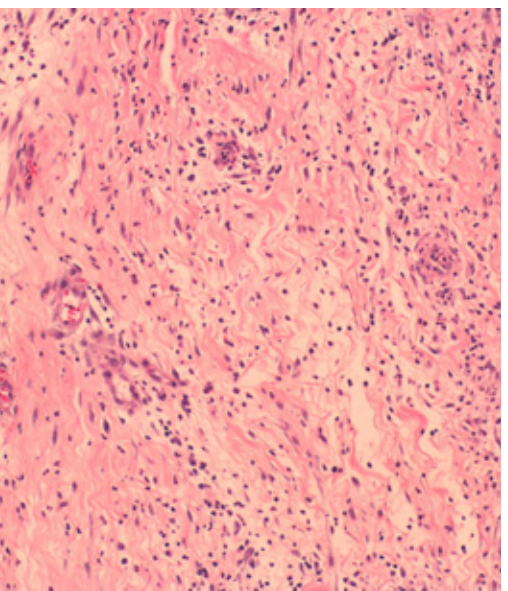
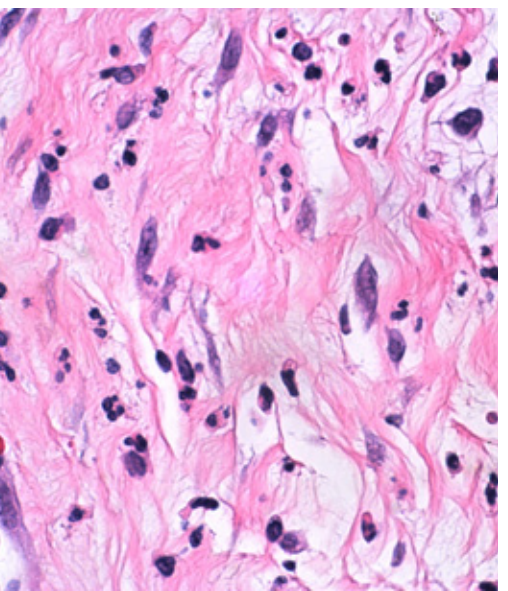
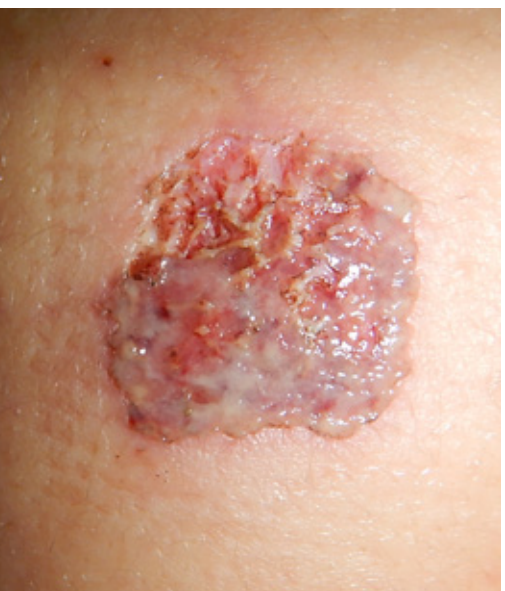
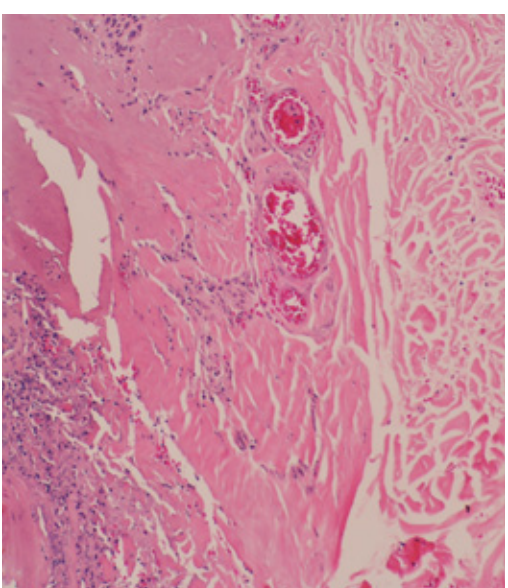
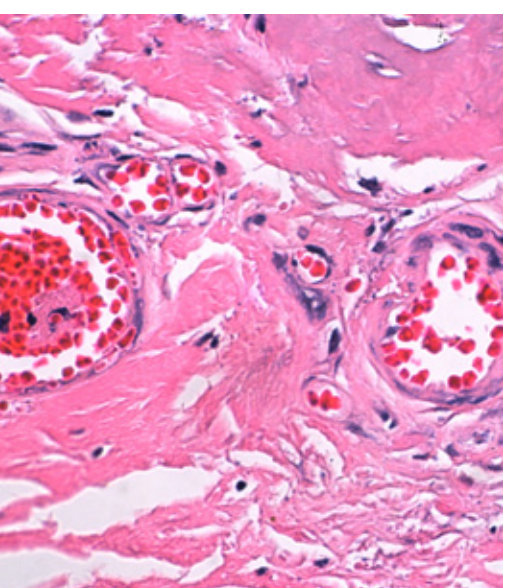
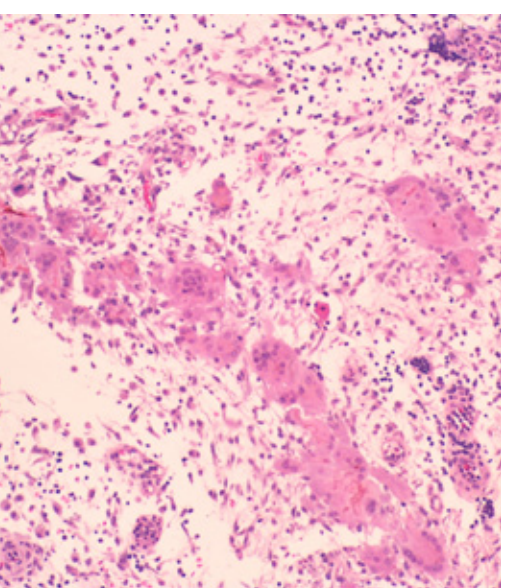
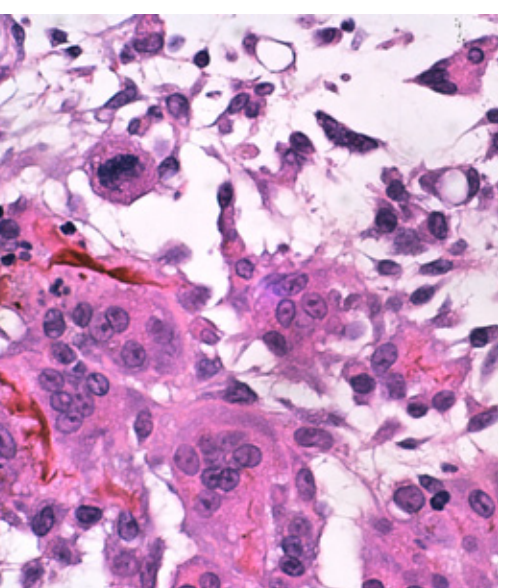
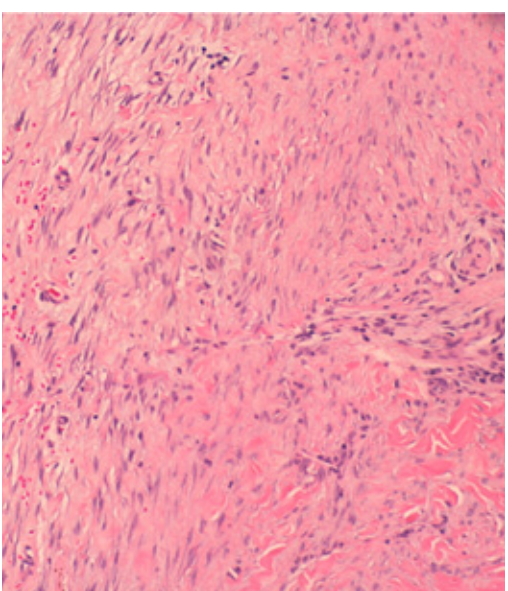
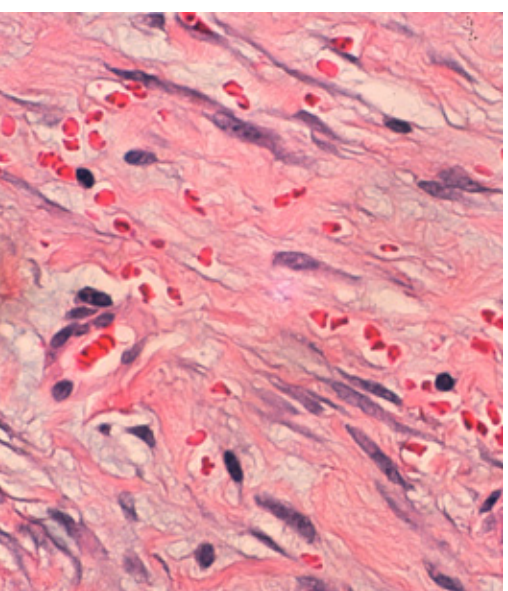
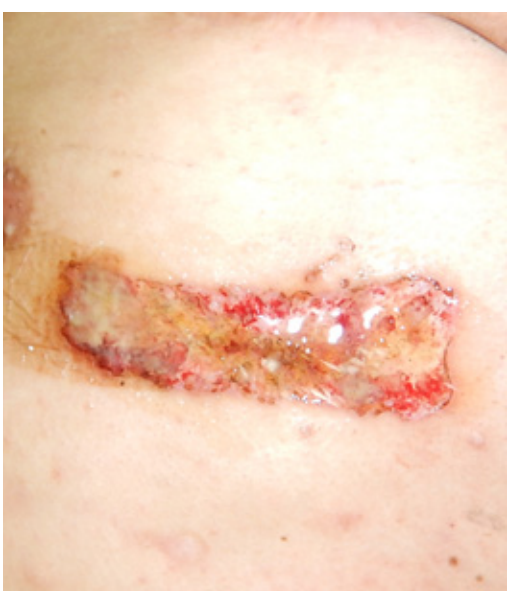
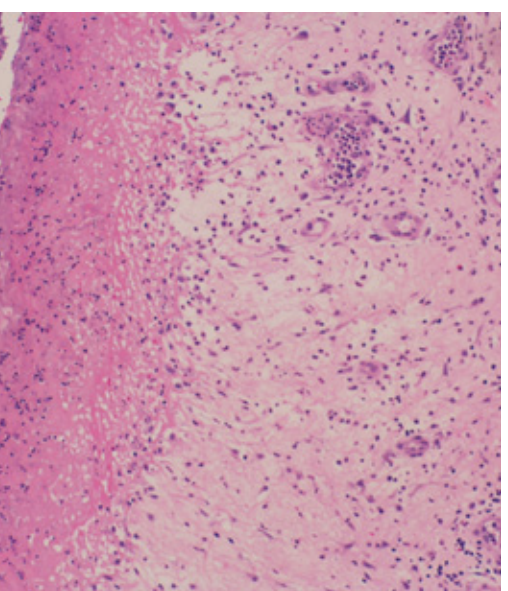
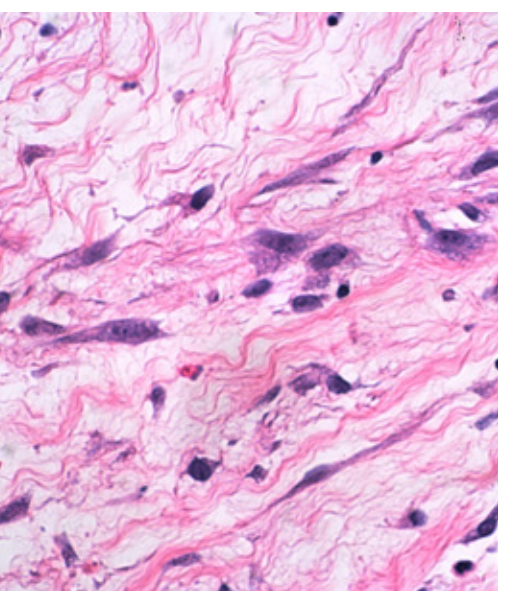
The natural dressing used, stimulate this wounds halted in the inflammatory state of wound healing to progress to the a proliferative state.

The application of a bio-cellulose gel and a bio-cellulose nano-structured matrix dressing, decreases periwound edema and stimulate the inflamatory process and enhance angiogenesis. No adverse effects were reported.

Conclusion

Cell migration, proliferation, differentiation, extracelular matrix fomation and the dynamic interaction within cells stimulates wound healing. We demostrates histological findings that show how the inflammatory phase is enhance by the bio-cellulose gel and a biocellulose nano-structured matrix dressing and the angiogenesis is greater using this dressing.

References:
1. Wahab N.,Guadagnoli J., Wray K.,Luttrell T.Use of plant based stem cell nanotechnology on nonhealing chronic wounds. Poster presented at SAWC 2015 San Antonio, Tx.

	Patient 1				Patient 2			
48 hrs								
Control								
Bio-cellulose dressing								
96 hrs								
Control								
Bio-cellulose dressing								
168 hrs								
Control								
Bio-cellulose dressing	