Quoi de neuf en TPN?

(Thérapie par Pression Négative)

Luc Téot Unité Médico-Chirurgicale Plaies et Cicatrisations

CHRU de Montpellier

Plan

- La tpn classique
- Revue de la littérature 2012; 120 articles consacrés à la TPN, dont 25 dans Int Wound Journal
- L'instillation en médecine
- Résultats d'une série de cas cliniques sur l'instillation, en particulier en cas d'échec de la tpn classique

Situations cliniques justifiant de l'utilisation du TPN

- Définies par les recommandations de l'HAS

- Pathologies aigües :
  - Plaie traumatique non suturable, avec perte de substance étendue et/ou profonde, avec ou sans infection,
  - Exérèse chirurgicale avec perte de substance étendue et/ou profonde, avec ou sans infection,
  - Désunion de plaie opératoire, étendue ou avec localisation défavorable, avec ou sans surinfection, préalablement parée si besoin.
  - Laparostomie.

- Pathologies chroniques:
  - Ulcère de jambe nécessitant une greffe cutanée,
  - Escarre de stade 3 ou 4, dans l'objectif d'un geste de couverture chirurgicale,
  - Plaie du pied diabétique avec perte de substance étendue et/ou profonde.

Le TPN doit être utilisé jusqu'à obtention d'un tissu de granulation ou de conditions suffisantes pour un geste chirurgical complémentaire

Ref.: HAS, Evaluations des traitements de plaies par pression négative (Janvier 2010)

- Un « lâcher de tpn »
  - Mousse
  - Compresse
  - Mixte
  - Usage unique
  - Pansement aspiratif

Après une phase de monopole…..

www.atmosmed.com

ATMOS S 041 Wound

Medical device

ATMOS MedizinTechnik GmbH & Co. KG

FDA Clearance CE Marking

Countries where the product is available: Worldwide

Description

The ATMOS S 041 Wound is operated by an electromotive membrane pump which is maintenance-free. When it operates, the pump creates a vacuum in the hose system and in the collection jar, with the help of which secretions can be sucked off through the set of hoses. The pump switches off after creation of the preset vacuum and then switches on again when the vacuum lies below a certain value. Continuous suction or intermit mode can be selected depending medical indication.

The secretion is collected in a collection jar. A hydrophobic bacterial filter prevents the secretion being inadvertently drawn into the pump head. The device is fitted with a rechargeable battery. A microprocessor controlled electronic charging unit guarantees the safe charging of the battery, and thus overcharging of the battery is avoided. The electronic unit prevents overheating of the suction device by a high temperature switch. For the mobile use a carrying strap is available. Useful accessories are a shoulder bag and a device support.

NPWT-Unit, mains cable, charger, connecting hose, secretion container, carrying strap, operating manual.

Indications

- Pressure ulcers;
- Diabetic/neuropathic ulcers;
- Venous insufficiency ulcers;
- Traumatic wounds;
- Post-operative and dehisced surgical wounds;
- Explored fistulas;
- Skin flaps and grafts.

Contraindications

- Eschar;
- Untreated osteomyelitis;
- Malignancy in wound (with exception of palliative care to enhance quality of life);
- Untreated malnutrition;
- Exposed arteries, veins or organs;
- Necrotic tissue;
- Non-enteric unexplored fistulas;
- Exposed nerves;
- Exposed anastomotic site;
- Exposed bone or tendons;
- Exposed vasculature.

Precautions

It is not designed for use with emergency medical services. Not to be used:

- In non-medical applications
- In presence of combustible or explosive fluids or gases.

Bibliography

INTERMITTENTLY VARIABLE TOPICAL NEGATIVE PRESSURE FOR WOUND CARE. Lt Staruch, Lt Col SLA Jeffery, 2010 The Royal Centre for Defence Medicine, The Queen Elizabeth Hospital Birmingham.

GENADYNE

www.genadyne.com / www.genadyne.eu

XLR8 NPWT

Medical device

Genadyne Europe BV

FDA Clearance CE Marking

Countries where the product is available: Netherlands, Sweden, USA, South Africa, France, Spain, Portugal, Turkey, Poland, Slowakia, Czech Republic, Canada, United Arab Enirates

Description

The XLR NPWT System comprised of a portable pump system supplied with a carry bag and a choice of disposables supplied either in a kit format or loose materials. Available wounddressing dispodables are:

- Wound exsudate canisters (200/400 or 800 ml)
- Flat or straight drains
- Gauze (different sizes)
- Foam (different sizes)
- XLR8 Transperent wound film (different sizes)
- Non Adherent Wound liner
- XLR8 Transparent film Port System.

Pump	5.9" (L) x 3.9" (W) x 2.1" (H)
Dimension	(150 mm x 99 mm x 53 mm)
Weight	1.5 lbs (0.68 kg)

Indications

Management and discharge of wound fluid and the enhancement of wound healing for a range of chronic - sub-acute - en acute wounds by applying local negative pressure.

Contraindications

- Wounds with malignancy in the wound bed or on the edges of the wound (the only exception is in the case of terminal/palliative care;
- Open (exposed) joints and untreated osteo myelitis;
- Open peritoneal cavities, pleural cavity and unexplored fistula;
- Exposed organs, arteries and veins;
- Untreated malnutrition;
- Wounds covered with more than 30% necrotic tissue or crust.

Precautions

- Patients with coagulation problems or who are on a anti-coagulation therapy, patients with active bleeding or difficult wound granulation
- Patients with unstable structures,
- Infected wounds should be followed intensively and dressing change is required every 12-14 hours.
- In rare cases the therapy can initiate muscle spasms or autonomous disreflexie in patents with neuro-muscular problems or a lesion of the spine; stop the therapy to eliminate the stimulus
- Never apply new dressings until all previous dressings have been removes
- Patients who are not able or willing to maintain the treatment regime; or for those patients whereby the treatment has to be regularly stopped during the day
- Specialists must take into consideration whether the patient (and the wound) are suited for treatment outside a controlled environment (example in a homecare environment).

Avance® Negative Pressure Wound Therapy system

Medical device

Mölnlycke

☐ FDA Clearance ☑ CE Marking

Countries where the product is available: Belgium, Denmark, Finland, Germany, Holland, Sweden, Switzerland, UK

Visit www.woundac.com

Description

Unit/Pump

- **Dimensions:**
- **Weight:** Less than 1kg
- **Pressure:** -60 to -200 mmHg
- **Battery Life:**

Disposables

- **Dressing:**
  Avance auze (different sizes)
  Avance Foam (different sizes)
  Avance Transparent Film
  Avance Film with Safetac Technology Mepitel®
  (different sizes)
- **Canister:** 300 - 800 ml
- **Aspiration system:** Flat or round drain

Accessories

- Carrying case • Charger • Docking station • Hard case
- Rail Holder • Steripod (NaCl) 20ml • Tubing
- Y-Connector

Indications

Use on the following wounds:

- Traumatic
- Surgical (sternal/abdominal/extremity)
- Chronic wounds including pressure ulcers, diabetic foot ulcers and venous leg ulcers
- Partial-thickness burns
- Dehisced wounds
- Flaps and grafts

Contraindications

- Direct positioning of NPWT over exposed organs, large veins & arteries, tendors or nerves
- Malignant wounds
- Untreated osteomyelitis or malnutrition
- Non-enteric and unexplored fistula
- Undebrided wounds with necrotic tissue with eschar present

Precautions

- Only to be used by qualified and trained personnel
- Blockage of drain and tubing may occur if the tubing is kinked
- If patients with ischaemic condition are treated with NPWT, extra monitoring of wound status is required to avoid risk of wound bed deterioration

Bibliography

BANWELL PE. Topical negative pressure therapy in wound care..*J Wound Care*, 1999;8(2):79-84.
DUNBAR A ET AL. Silicone net dressing as an adjunct with negative pressure wound therapy. *Ostomy Wound Manage*, 2005;51(11A Suppl):21-22.
MALMSJÖ M. Similar effects of black and green polyurethane foam in NPWT, poster presented at EWMA May 2010.
WHITE R, MORRIS C. *Br J Nurs*, 2009; 18(1): 58-64.

Prevena™ I.M.S.

Medical device

KCI (Kinetic Concepts Inc.) San Antonio TX, USA
KCI Europe Holding BV, Amstelveen, NL

✔FDA Clearance ✔CE Marking

Countries where the product is available: Australia, Europe, New Zealand, USA, in all other countries registration is in process

Description

Unit/Pump

- **Dimensions:** 145x75x30 mm
- **Weight:** 235 gram
- **Pressure:** 125 mm Hg
- **Battery Life:** According shelf life / batteries exchangeable (3 AA batteries)

Disposables

- **Dressing:** Prevena™ Incision Dressing (one size)
  Integrated Self Adhesive Peel and Place Skin friendly, non-adherent wicking silver interface, including
  Prevena Pad with Pressure Indicator
  Polyurethane foam (Prevena™ purple)
  A set of Prevena™ Patch Strip
- **Canister:** 45ml.
- **Aspiration system:** Prevena™ Pad

Accessories

- Prevena™ carrying Case

Indications

Treatment of incisions in patients at high risk for Surgical Site Infections in:

- Cardiovascular and Thoracic Surgery (Sternal Wounds)
- Orthopedics Surgery (Hip Replacement)
- Ob/Gyn Surgery (C-section / Hysterectomy)

Contraindications

- Sensitivity to silver

Precautions

Apply after surgery on dry, clean, shaved incisions. Do not cut Prevena™ Dressing or bridge it with another dressing. Peel and Place:

- No cutting
- No bridging
- No drains underneath the drape area

Leave the medication alone for (at least) 4 days

Bibliography

ORGILL DP, MANDERS EK, SUMPIO BE, LEE R, ATTINGER CE, GURTNER GC, EHRLICH HP. The Mechanisms of action of vacuum assisted closure: more to learn. *Surgery*, 2009 Jul; 146(1): 40-51.
REDDIX RN JR, LENG XI, WOODALL J, JACKSON B, DEDMOND B, WEBB LX. The effect of incisional negative pressure therapy on wound complications after acetabular fracture surgery. *J Surg Orthop Adv*, 2010 Summer; 19(2): 91-7.
STANNARD JP, ROBINSON JT, ANDERSON ER, MCGWIN G, JR., VOLGAS DA, ALONSO JE. Negative pressure wound therapy to treat hematomas and surgical incisions following high-energy trauma. *J Trauma*, 2006 June 1; 60(6): 1301-6.
TIMMERS MS, LE CESSIE S, BANWELL P, JUKEMA GN. The effects of varying degrees of pressure delivered by negative-pressure wound therapy on skin perfusion. *Ann Plast Surg*, 2005 Dec; 55(6): 665-71.
TORBRAND C, UGANDER M, ENÖBLOM H, ÅRHEDEN H, INGEMANSSON R AND MALMSJO M, Wound contraction and macro deformation during negative pressure therapy of sternotomy wounds. *Journal of cardiothoracic surgery*, 2010; 5: 75.
WILLY C, THÜN-HOHENSTEIN H, WEYMOUTH, KOSSMANN T, ENGELHARDT M. Experimental Basis II – pressure values under vacuum therapy foams – an experimental in vitro and in vivo investigation, book chapter in The theory and practice of Vacuum Therapy, scientific basis, indications for use, case reports, practical advice, Christian Willy, editor.

SNaP® Wound Care System

Medical device

Spiracur Inc.

☑ FDA Clearance ☐ CE Marking

Countries where the product is available: USA

Visit www.woundac.com

Description

Unit/Pump

- **Dimensions:**
- **Weight:** 3 oz.
- **Pressure:** 75 - 100 - 125 mmHg.
- **Battery Life:**

Disposables

- **Dressing:** Thin hydrocolloid SKT-A ? 15x15x10 cm
- **Canister:** 60ml.
- **Aspiration system:**

Accessories

- SNaP® Wound Care Strap.
- An integrated check-valve.
- 100% disposable and requires no electric or battery power.

Indications

For removal of small amounts of exudate from chronic, acute, traumatic, subacute and dehisced wounds, ulcers (such as diabetic or pressure), and surgically closed incisions.

Contraindications

- Actively infected wounds
- Inadequately drained wounds
- Inadequately debrided wounds
- Exposed blood vessels, anastomotic sites, organs, tendons or nerves
- Wounds containing malignancy
- Fistulas
- Osteomyelitis
- Actively bleeding wounds

Precautions

- Patient size and weight should be carefully considered when prescribing the SNaP™ Wound Care System.
- Care must be taken to position the Cartridge and Dressing tubing appropriately to prevent the risk of tripping and falling.
- To reduce the risk of transmission of blood-borne pathogens, apply standard precautions for infection control with all patients, per institutional protocol. In addition to gloves, use gown and goggles if exposure to body fluids is likely.
- The SNaP™ Wound Care System may not be appropriate for treatment of noncompliant or combative patients.
- Patients may bathe while using the SNaP™ Wound Care System. However, patients should avoid getting the SNaP™ Wound Care System wet.

Bibliography

FONG KD, HU D, EICHSTADT S, GUPTA DM, PINTO M, GURTNER GC, LONGAKER MT, LORENZ HP.The SNaP system: biomechanical and animal model testing of a novel ultraportable negative-pressure wound therapy system. *Plast Reconstr Surg*, 2010 May;125(5):1362-71.
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www.smith-nephew.com / www.npwt.com

smith&nephew

RENASYS™ GO

Medical device

Smith & Nephew

✓FDA Clearance ✓CE Marking

Countries where the product is available: Asia and many countries within Australasia, Europe, Middle East, North America

Description

Unit/Pump

- **Dimensions:** 175x210x85mm (7x8.3x3.5 in.)
- **Weight:** 1.1 kg (2.4 lbs)
- **Pressure:** -200 mmHg
- **Battery Life:** 20 hours - Charging time: 3 hours

Disposables

- **Dressing:**
  - Antimicrobial gauze (different sizes)
  - Foam dressing (different sizes)
  - Wound contact layer
  - Transparent adhesive film
- **Canister:** 300 - 750ml
- **Aspiration system:** Channel or flat or round drains

Accessories

- RENASYS GO Carry case • RENASYS Y-Connector.
- RENASYS Transparent film • RENASYS Port.
- SKIN-PREP™ wipes • Self-adhesive blue labels.

Indications

Patients whom would benefit from a suction device (Negative Pressure Wound Therapy) as it may promote wound healing via removal of wound fluids. Examples of appropriate wounds include:

- Chronic
- Acute
- Traumatic
- Sub-acute and dehisced wounds
- Ulcers such as pressure or diabetic
- Partial thickness burns
- Flaps and grafts

Contraindications

- Necrotic tissue with eschar
- Untreated osteomyelitis
- Malignancy in wound (except palliative care to enhance quality of life)
- Exposed arteries, veins or organs
- Non-enteric and unexplored fistulas
- Anastomotic sites

Precautions

- Receiving anticoagulant therapy or platelet aggregation inhibitors, actively bleeding or have weakened blood vessels or organs.
- Infected wounds.
- Should only be used by qualified and authorised personnel.
- Do not apply NO-STING SKIN-PREP™ wipes directly onto open wounds.
- Underlying structures, such as bone and tendon, must be covered by the non-adherent dressing layer.
- The vacuum level should never be painful.
- The RENASYS GO carry bag contains magnets which may influence the function of certain electrical devices, including pacemakers.
- More precisions are available on the web site.

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CAMPBELL PE, SMITH GS, SMITH JM. Retrospective clinical evaluation of gauze-based negative pressure wound therapy. *Int Wound J*, 2008 Jun;5(2):280-6. **CHARIKER ME, GERSTLE TL, MORRISON CS.** An algorithmic approach to the use of gauze-based negative-pressure wound therapy as a bridge to closure in paediatric extremity trauma. *Plast Reconstr Surg*, 2009 May;123(5):1510-20. **HURD T, CHADWICK P, COTE J, COCKWILL J, MOLE TR, SMITH JM.** Impact of gauze-based NPWT on the patient and nursing experience in the treatment of challenging wounds. *Int Wound J*, 2010 Dec;7(6):448-55. **JEFFERY LC.** Advanced wound therapies in the management of severe military lower limb trauma: a new perspective. *Eplasty*, 2009 Jul 21;9:e28. **LLANOS S, DANILLA S, BARRAZA C, ARMIJO E, PIÑEROS JL, QUINTAS M, SEARLE S, CALDERON W.** Effectiveness of negative pressure closure in the integration of split thickness skin grafts: a randomized, double-masked, controlled trial. *Ann Surg*, 2006 Nov;244(5):700-5. **MALMSJÖ M, LINDSTEDT S, INGEMANSSON R.** Influence on pressure transduction when using different drainage techniques and wound fillers (foam and gauze) for negative pressure wound therapy. *Int Wound J*, 2010 Oct;7(5):406-12. **MALMSJÖ M, INGEMANSSON R, MARTIN R, HUDDLESTON E.** Negative-pressure wound therapy using gauze or open-cell polyurethane foam: similar early effects on pressure transduction and tissue contraction in an experimental porcine wound model. *Wound Repair Regen*, 2009 Mar-Apr;17(2):200-5. **MALMSJÖ M, INGEMANSSON R, MARTIN R, HUDDLESTON E.** Wound edge microvascular blood flow: effects of negative pressure wound therapy using gauze or polyurethane foam. *Ann Plast Surg*, 2009 Dec;63(6):676-81.

V.A.C. Instill®

Medical device

KCI

✔FDA Clearance ✔CE Marking

Countries where the product is available: Europe, USA

Description

Unit/Pump

- **Dimensions:** 420x280x180mm with stowed installation pole
- **Weight:** 5,1 kg
- **Pressure:** -50 to -200 mmHg (25-mm increments)
- **Battery Life:** 4 hours

Disposables

- **Dressing:** White foam dressing
- **Canister:** 500 ml
- **Aspiration system:** SensaTRAC™ exposant Technology

Accessories

Indications

- Acute, sub-acute and chronic wounds
- Surgical wounds
- Dehiscent wounds
- Infected wounds
- Traumatic wounds
- Exposed orthopedic implant

Contraindications

- None enterocutaneous unexplored fistula
- Untreated osteomyelitis
- Necrotic tissue, eschar present
- Tumoral tissue in the wound
- Exposed blood vessels, organs or nerves
- Thoracic cavity
- Use with hydrogen peroxide or alcohol based solutions

Precautions

- Bradycardia (proximity with respect to the pneumogastric nerve)
- Difficult haemostasis
- Patient presenting with bleeding
- Patient receiving anticoagulant therapy
- Wound with unstable features (e.g. bone fragments)

Bibliography

Timmers MS, Graafland N, Bernards AT, Nelissen RG, van Dissel JT, Jukema GN. Negative pressure wound treatment with polyvinyl alcohol foam and polyhexanide antiseptic solution instillation in posttraumatic osteomyelitis. *Wound Repair Regen.* 2009 Mar-Apr;17(2):278-86.

www.kci1.com / www.kci-medical.com

V.A.C. Via™ Therapy System

Medical device

KCI (Kinetic Concepts Inc.) San Antonio TX, USA
KCI Europe Holding BV, Amstelveen, NL

✔FDA Clearance ✔CE Marking

Countries where the product is available: Australia, Europe, New Zealand, USA, other countries will follow during 2011 and 2012

Description

Unit/Pump

- **Dimensions:** 173x99x61 mm
- **Weight:** Unit weight plus canister (empty) 320 g
- **Pressure:** 75 - 125 mm Hg
- **Battery Life:** 9 hours less than 6 hours

Disposables

- **Dressing (different sizes):** V.A.C. Via™ Granufoam Spiral Dressing; VAC® Drape
- **Canister:** 250ml
- **Aspiration system:** SensaTRAC™ exposant Technology

Accessories

- 3M Cavilon Skin Prep
- V.A.C. Via™ Unit AC-power charger
- V.A.C. Via™ Unit Carrying Case

Indications

Patients with chronic, acute, traumatic, subacute and dehisced wounds, partial-thickness burns, ulcers (such as diabetic or pressure), flaps and grafts.

Contraindications

- Necrotic tissue/eschar present
- Direct placement of V.A.C.® dressings over exposed vital structures (i.e. tendons, ligaments, blood vessels, anastomotic sites, organs and/or nerves)
- Untreated osteomyelitis
- Non-enterocutaneous or unexplored fistulae
- Malignancy in the wound

Precautions

Precautions should be taken for patients:

- With active bleeding
- With difficult wound haemostasis
- Who are taking anticoagulant medication.

Precautions should be taken:

- When placing the V.A.C.® dressing in close proximity to vital structures. Ensure these are adequately protected with overlying fascia, tissue or other protective barriers
- With respect to weakened, irradiated or sutured blood vessels or organs
- In the presence of bone fragments or sharp edges. These could puncture protective barriers, vessels or organs

Notice to users: As with any medical device, failure to follow product instructions or adjusting settings and performing therapy applications without the express direction and/or supervision of a trained clinician may lead to improper product performance and to the potential for serious or fatal injury.

Bibliography

V.A.C. Via™ Therapy System is based on V.A.C.® Therapy, the only npwt system based on: Over 600 peer reviewed arcticles • Over 70 textbook citations • Over 800 abstracts • Oer 17 RCTs • And Over 3 Million patients treated worldwide • Look a the website

- De plus en plus petit…

Pico®(Smith & Nephew)

Un an après chirurgie du rachis
+ radiothérapie
Décollement sur la totalité
de l’incision

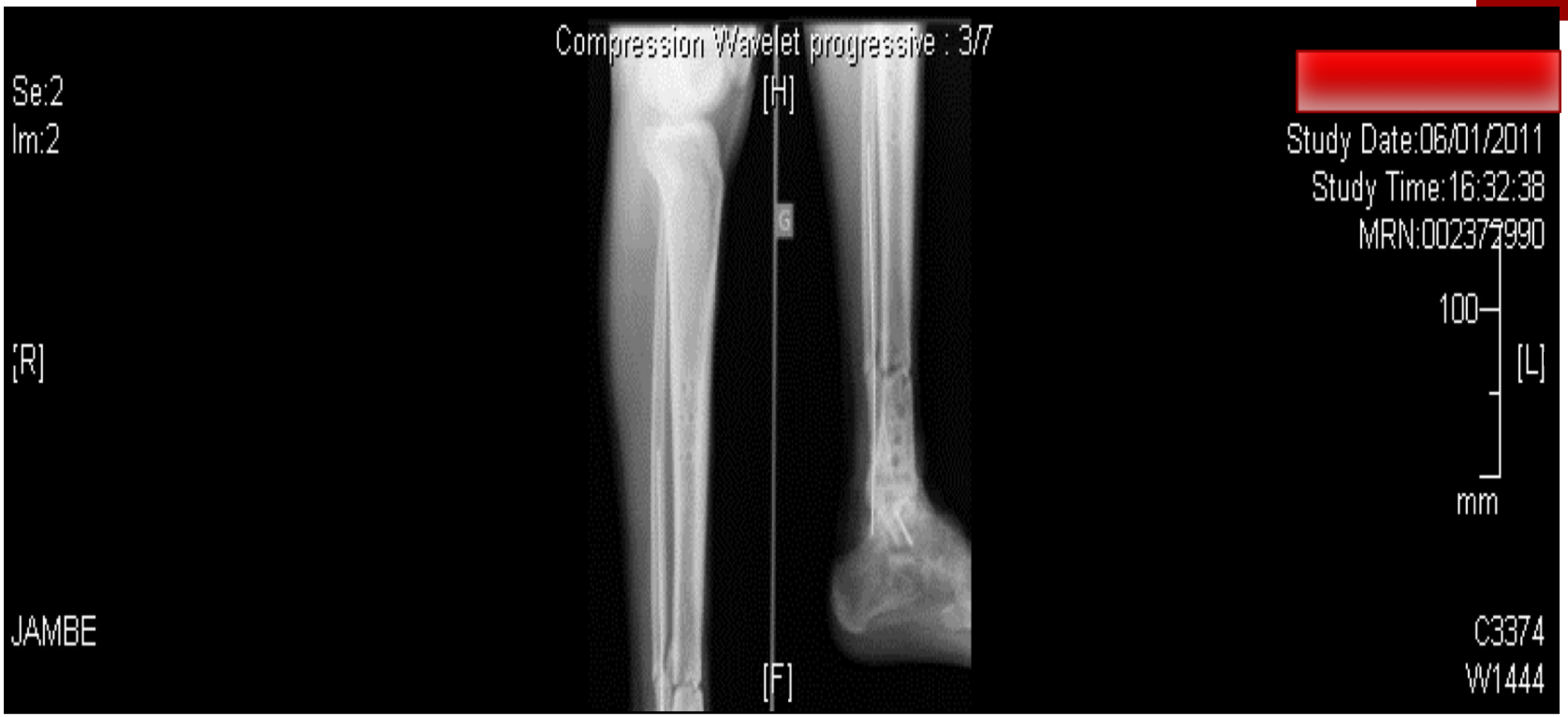
Mise à plat du décollement
Thérapie par pression négative

4 semaines de TPN
Rapprochement des berges

Fermeture chirurgicale des plaies
Stabilisation à un an

17 ans, accident de scooter, fracture ouverte de la cheville.
4 mois post-op. Ostéo nécrose de l’astragale sur clou axial

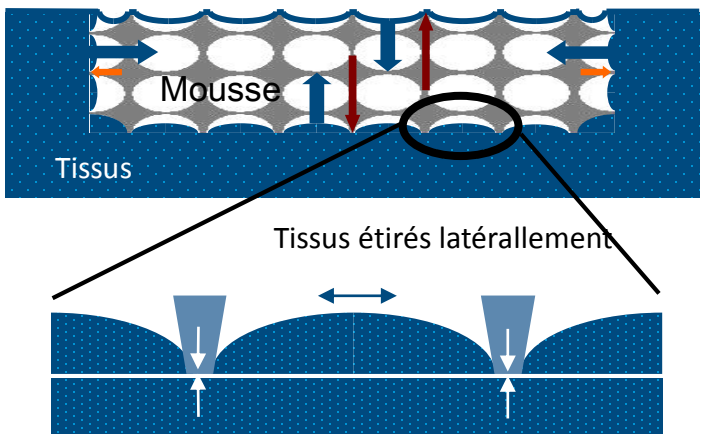
Vac pendant 3 mois, difficile
car orifice petit
Cavité polymorphe, étroite
Adaptation des mousses
à chaque psmt
Comblement progressif
Greffe de peau
Fermeture



Ablation du matériel 10 mois après l’accident
Reprise de l’appui

Evolution sous vac et integra

L'interaction mousse-tissu induit une macrodéformation et une microdéformation



Pression négative (Vide)

Contrainte Compressive Normale [2]

Contrainte Compressive Latérale

Macro déformation

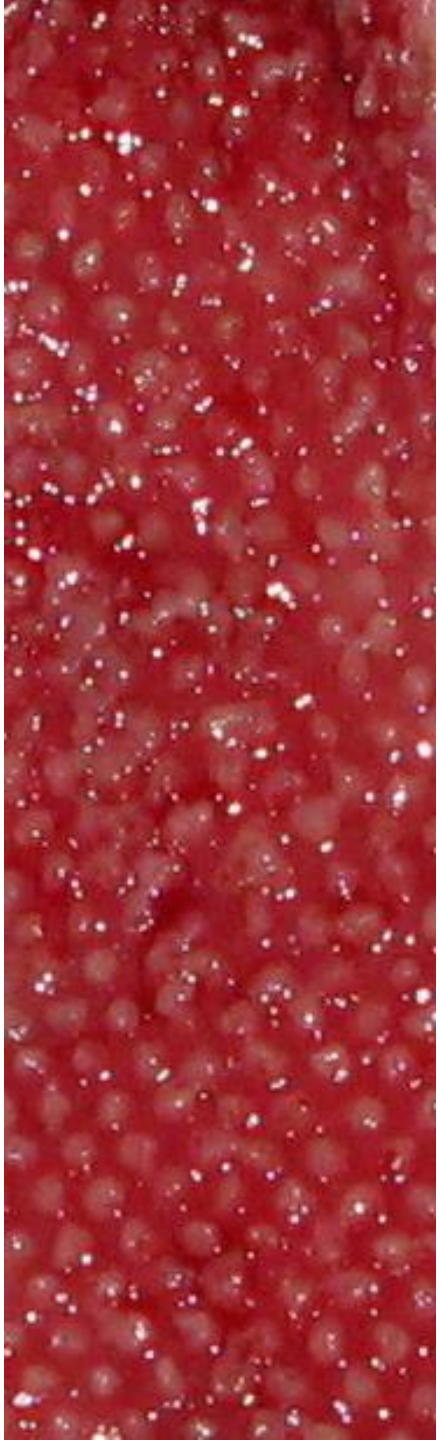
- altération visible de la forme et/ou du volume
- lorsque la pression négative compresse le pansement en rapprochant les berges de la plaie

Micro déformation

- étirement des cellules induit par le contact de la mousse avec le lit de la plaie
- Induisant prolifération cellulaire et angiogenèse (1,2)

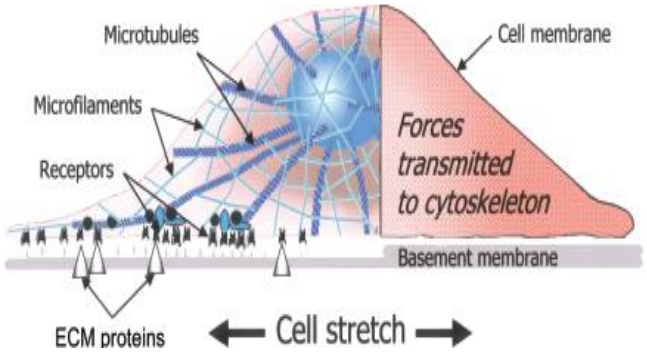
1) Huang et all, Mol Biol Cell1998; 9;3179
2) Chen CS et all, Science, 1997;276:1425

formation rapide du tissu de granulation par aspiration permanente transmise aux berges de la plaie



Stimulation de la proliferation cellulaire par microdéformation

stimulation et division de nouveaux fibroblastes. Formation rapide du tissu de granulation



Les intégrines activées influent sur la signalisation cellulaire et la transmition de l'étirement mécanique

Changement structurel dans le cytosquelette

Diminution de la régulation des inhibiteurs du cycle cellulaire

Activations des élements requis pour la transition phases G1/S

Prolifération des fibroblastes et angiogénèse

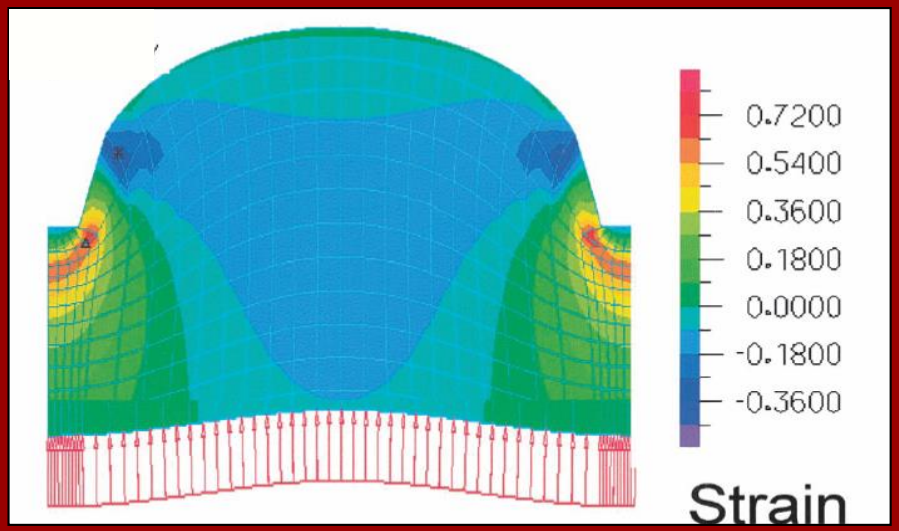
Saxena V, et al. Plastic and Reconstructive Surgery, 2004; 114(5):1086-96. Huang S, Chen CS, Ingber DE. Mol Biol Cell. 1998 Nov;9(11):3179-93. Danciu TE, Gagari E, Adam RM, Damoulis PD, Freeman MR. J Dent Res. 2004 Aug;83(8):596-601. Katsumi A, Orr AW, Tzima E, Schwartz MA. J Biol Chem. 2004 Mar 26;279(13):12001-4. Epub 2004 Feb 11.

La demonstration que les microdéformations favorise l'obtention des tissus de granulation établie par les équipes d'Harvard et du MIT

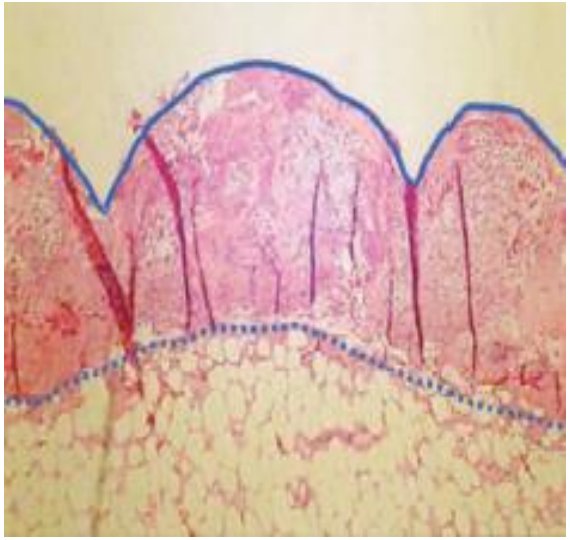
Analyse des réponses des tissus à des microdéformations

L'analyse des résultats obtenus a permis de générer des modélisations prédictives des effets du contact des mousses sur le développement du tissu de granulation

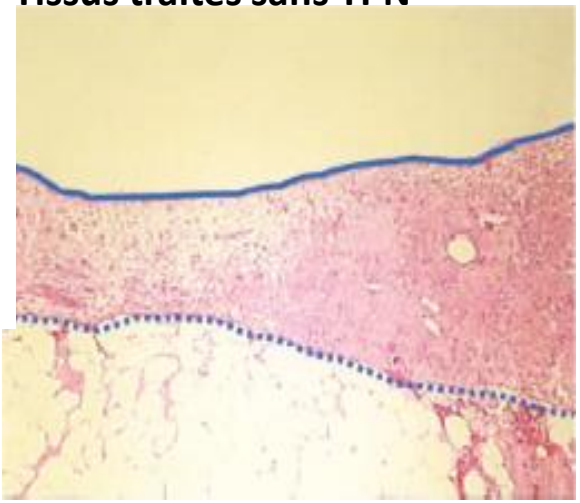
Saxena et. al.



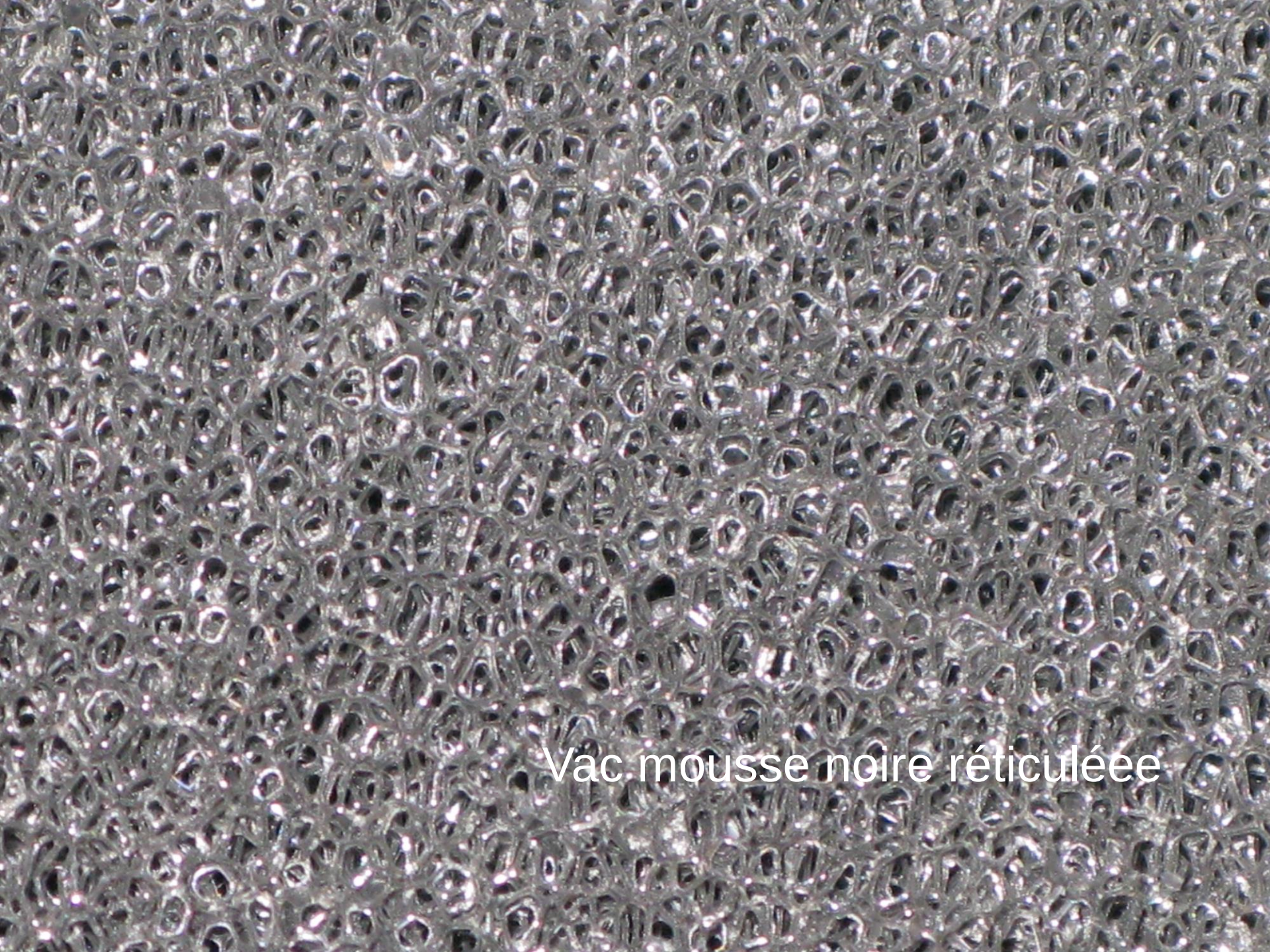
Tissus traités avec TPN



Tissus traités sans TPN



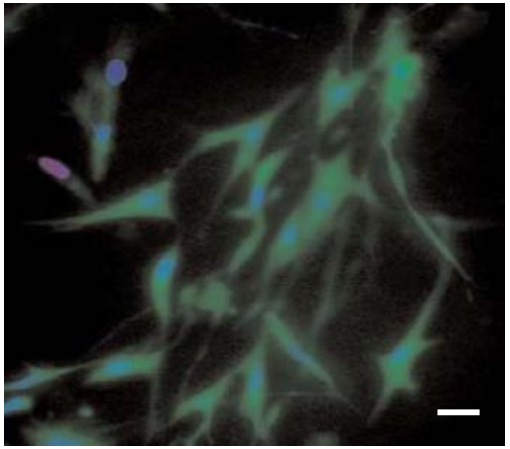
Saxena V. et al. Plastic and Reconstructive Surgery, 2004; 114(5):1086-96.


Vac mousse noire réticuléee

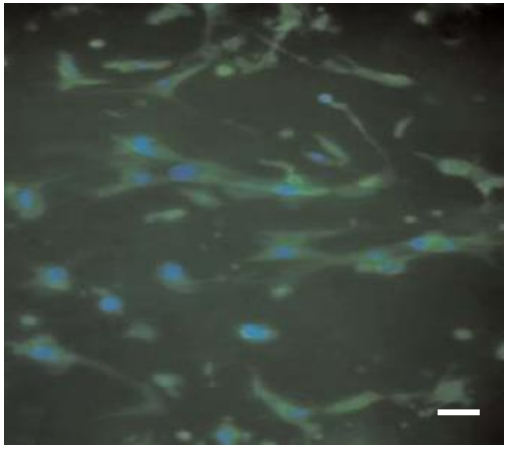
Effets comparatifs des microcontraintes

Les microcontraintes changent la forme des cellules

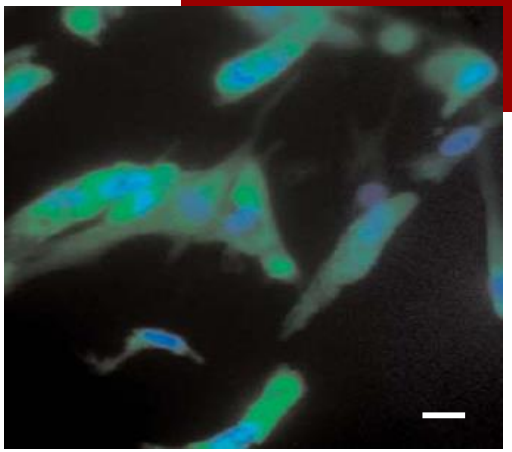
— 20 µm



Pas de contraintes



Gaze sous contraintes



V.A.C.® Therapy

- Culture en 3_D de fibroblastes dermiques adultes
- Trois options thérapeutiques:
  - Pas de contraintes
  - Gase sous contraintes
  - Vac therapy

McNulty et al, Wound Repair and Regen 2007: 15; 838-846

- Plaie cavitaire: mousse (chirurgien,)
- Plaie plane : compresse plus facile pour l'IDE

- Pas d'évidence que la compresse apporte plus de bénéfices que le pansement standard

Comment choisir?

- Mésusage :
- Ecrasement des berges
- Non contact avec les berges en profondeur
- Aspiration trop faible
- Changement de pansement tardif

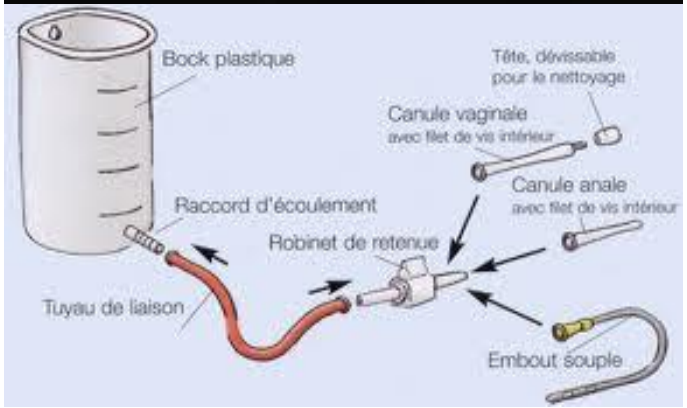
Complications (liées à l'absence de formation des profesionnels)

Résultats du STIC TPN 2005

- 100% d'effet positif sur les plaies aigües ou chroniques
- Évite des amputations
- Solution alternative aux lambeaux
  - Simplifie la procédure chirurgicale (greffe de peau)
  - Proposé en attente de chirurgie reconstructive . Réduit l'oedème et l'infection dans les factures ouvertes du tibia
- Multiplie par 4 le coût de traitement si le patient reste en milieu hospitalier

Irrigation : définition (Larousse)

- Apport d'eau réalise sur un terrain cultivé ou une prairie en vue de compenser l'insuffisance de précipitations et/ou des réserves hydrique du sol et , ainsi de permettre le plein développement des plantes
- Action de mettre une partie malade en contact prolongé avec un liquide (irrigation d'une plaie avec un drain perforé, irrigation d'une cavité naturelle par une canule, etc…



Instillation + pression négative en alternance?

- Tout pour réussir en théorie
- Manque de preuves cliniques fortes
- Précisions sur les liquides à instiller: gradation en fonction de la présence d'un biofilm?

v.a.c.ulta™
KCI Healing by design

TPN + Instillation

Réservoir : 500 ml & 1000 ml

Cassette d'instillation
V.A.C. VeraLink™

Machine
V.A.C. ULTA™

V.A.C. VeraT.R.A.C.™ Pad :
double tubulure
(une délivrant l'instillat,
l'autre la pression négative)
connectée au pansement
par un seul tampon
(similaire au tampon SensaT.R.A.C.)

Pansement
V.A.C. VeraFlo™

Essais effectués au CHRU de Montpellier (S.Fluieraru, C.Herlin)

De janvier à novembre 2012

- Prescription pour 24 patients
- Evaluation pour 20 patients
- Situations cliniques : désunion post-op, hématome, escarre, ostéite, MPP, plaie traumatique, fasciite nécrosante
- Durée moyenne de VAC Irrigation : 2 semaines
- Solutions irriguées : sérum physiologique, PHMB (2 cas)
- Traitement antérieur : 11 VAC thérapie classique

Mme B. Sandra, 29 ans

- 30/11/11 : Césarienne
- 06/12/11 : Reprise chirurgicale pour perte de substance cutanée importante en regard de la cicatrice de césarienne, mauvaise évolution clinique. Approfondissement avec plaie pénétrante
- 26/12/11 : Echec fermeture
- Début VAC Classique
- 18/01/12 : Echec fermeture

Mme B. Sandra, 29 ans

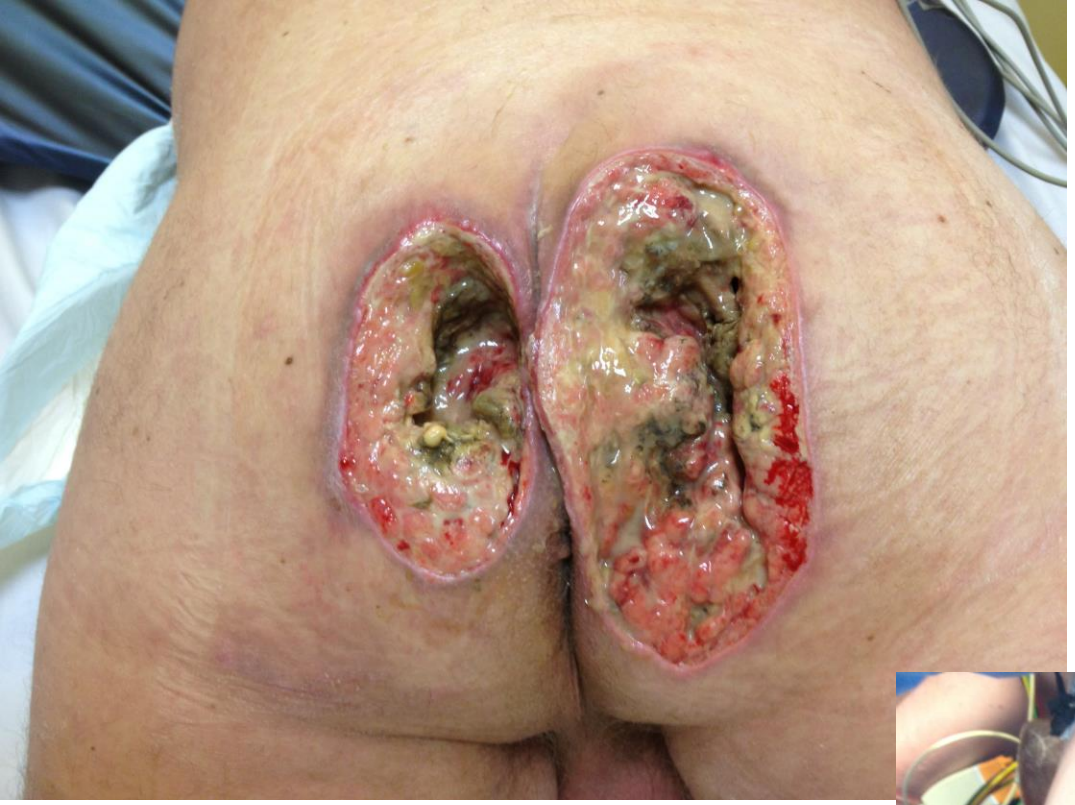
- 23/01/12 Mise en place du VAC Ulta
- 02/02/12 : Evolution satisfaisante

- 03/02/12 : [illegible] Standard
- 27/02/12 : Fermeture obtenue

KCI

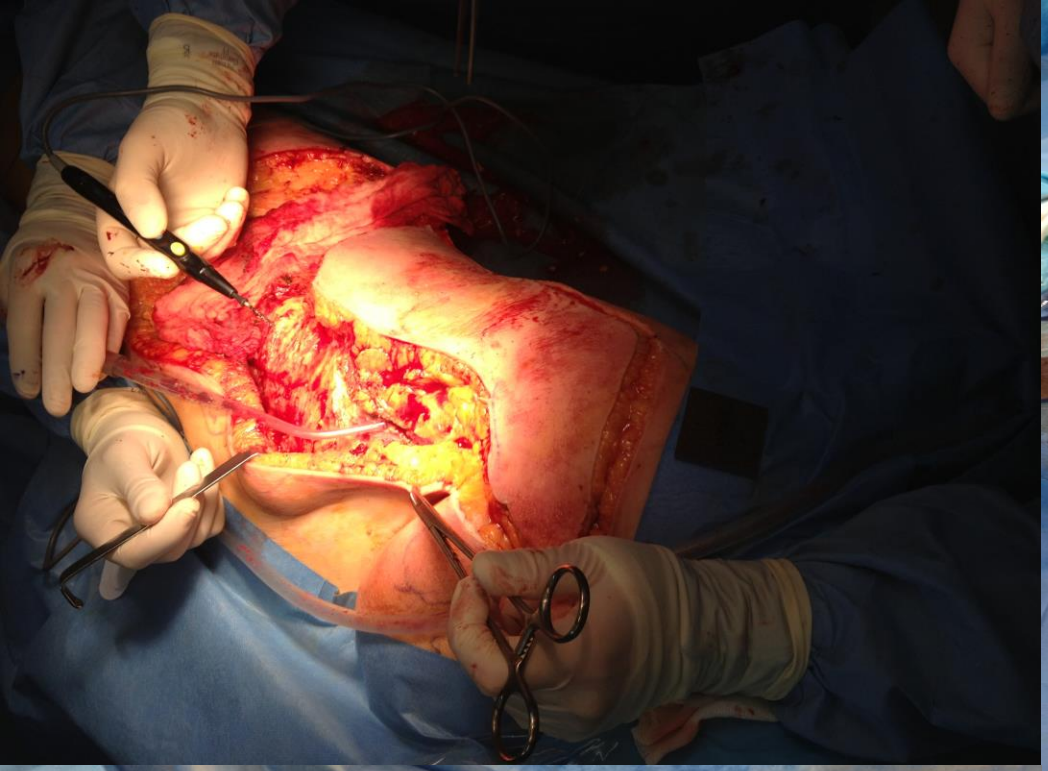
Mr D, Bruno, 54 ans

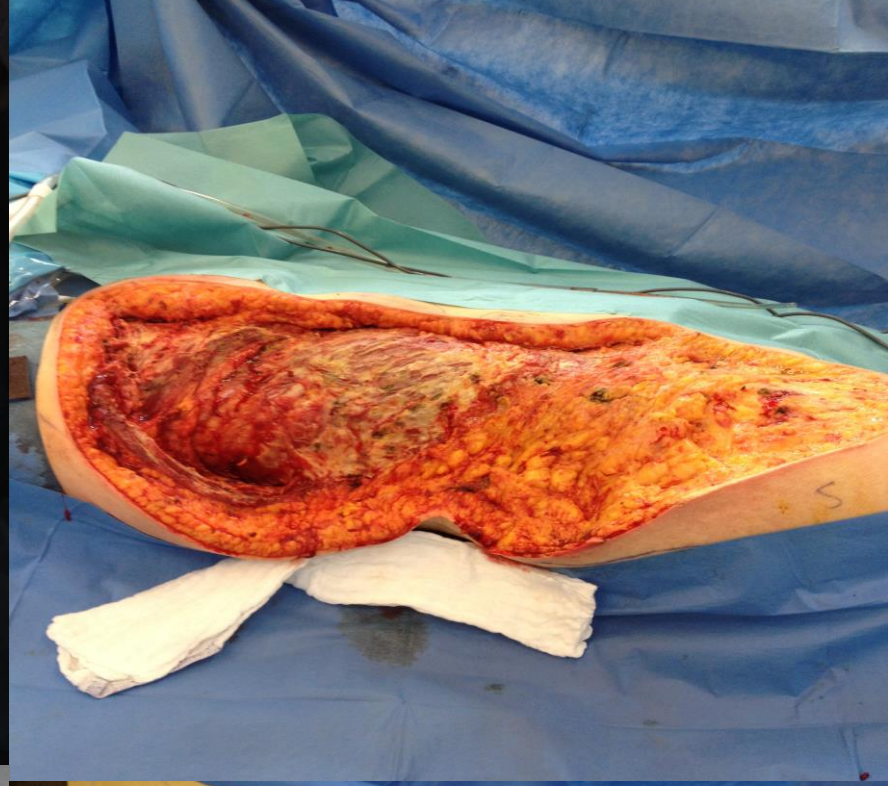
- Escarre sacrée bilatérale atypique après une revascularisation type aorto-bifémoral avec suspicion de thromboses des hypogastriques
- VAC classique le 31 / 08,
- Choc septique
- VAC Ulta le 9/11
- Lente remontée de pds profondes et bilatérales

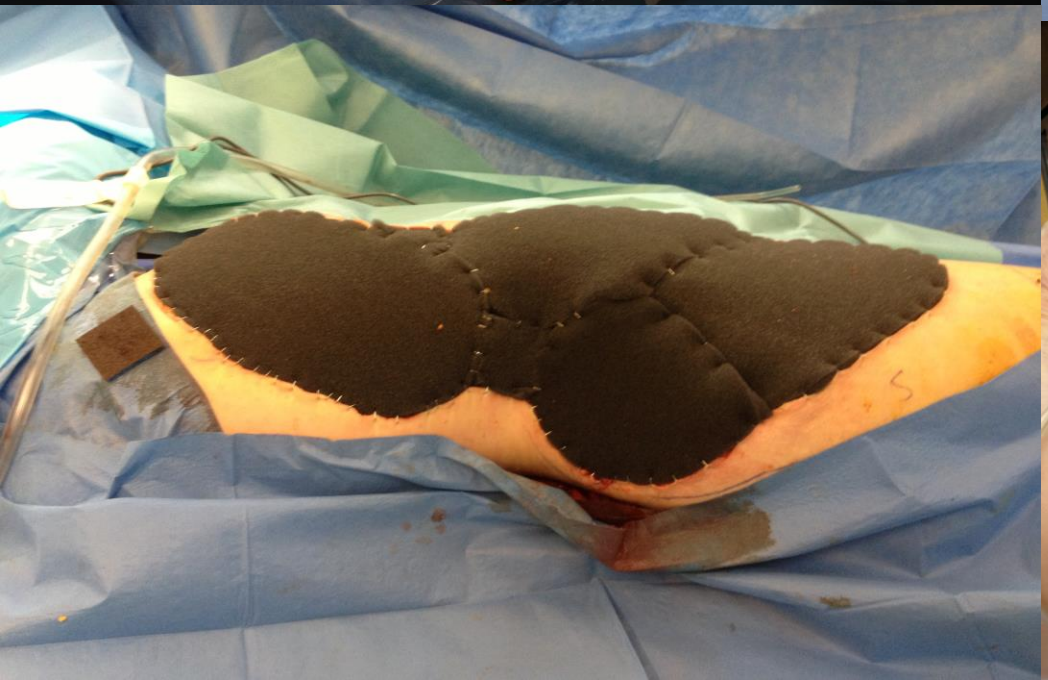


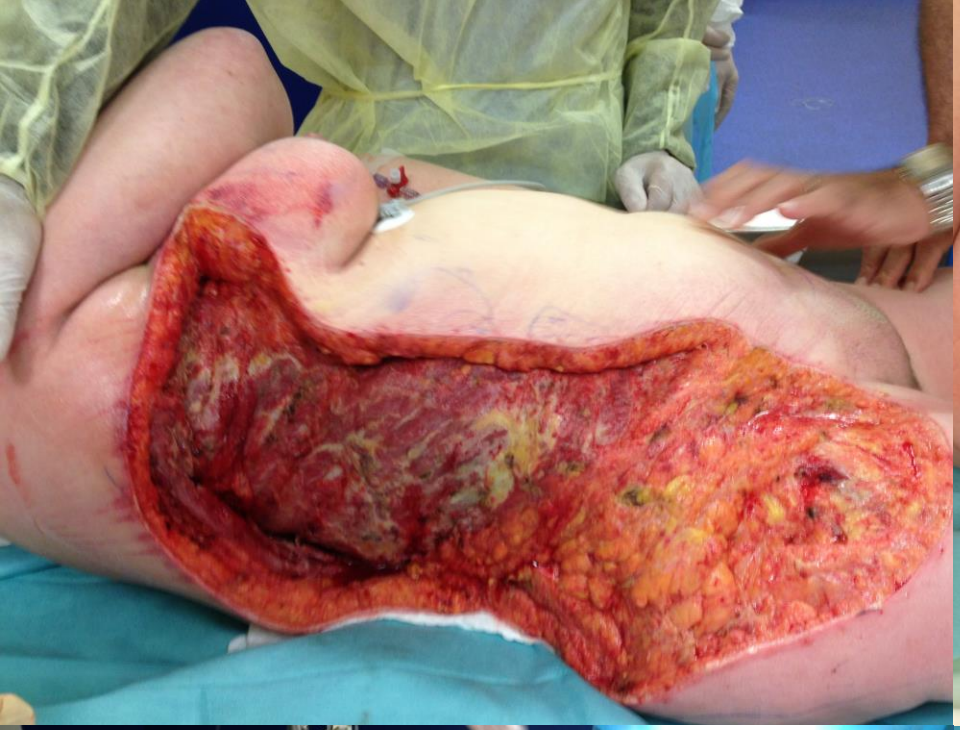
Mme V, Bernadette, 47 ans

- Fasciite nécrosante
- Mutée d'hôpital périphérique le 15 Nov
- Opérée le jour même
- Pds de 90cm sur 45
- Vac ulta prévient l'extension du processus inf
- Integra le 5 Déc
- Greffe de peau le 23 Décembre









Mr P, Daniel, 67 ans ostéoarthrite 1er méta artériopathie IPS 0,6

Mr P,Daniel, 67 ans ostéoarthrite 1er méta artériopathie IPS 0,6

Essais effectués au CHRU

Résultats sur 24 cas traités
de janvier à décembre 2012

- Résultats favorables
  - Fermeture / rapprochement des berges : 2
  - Fermeture / lambeau : 6
  - Fermeture / GDE : 3
  - Fermeture / Integra + GDE : 10
- Echecs : 1
- En fin de traitement : 2

Cibler les indications

- Existence de comorbidités sévères : diabète, paraplégie, infection

- Echec de la VAC thérapie standard : 11 sur la période étudiée présence de germes pathogènes, de résidus nécrotiques, de plaies cavitaires ou d'insuffisance de vascularisation de la plaie

- D'emblée sur patients présentant profil de non cicatrisation sauvetage de membres (avec un risque d'échec)

1 évolution défavorable

- Septicémie sur hématome de jambe sur anticoagulants
- Destruction valvulaire cardiaque double
- Vac classique pdt 4 semaines: échec
- Vac ulta: reprise du bourgeon
- Découverte thrombose art poplitée
- Revascularisation par stent
- Echec
- Amputation

Impact économique

Exemple : petite plaie, chgt 2 fois par semaine

	VAC Classique	VAC + Irrigation
Location machine	1	1
DA		
L		
Consommables	1	1,7
Pharmacie		
Coût total pour 1 semaine	1	1,2

Choix de l'instillat ?

- Sérum salé (solution choisie au CHRU)
- Solution d'irrigation phmb prontosan (recommandé par une étude in vitro réalisée en interne chez KCI)
- Solution antibiofilm type bétadine gynécologique

Discussion de l'offre TPN en 2013

- Technique tpn à plusieurs vitesses:
  - pansements à pression négative
  - traitement par pression négative mousse « classique »
  - instillation
- Choix fonction de l'effet recherché