CHIRURGIA PLASTICA, OBESITA' E INFEZIONI DI FERITA

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Translations

Research

The Impact of Obesity on Plastic Surgery Outcomes: A Systematic Review and Meta-Analysis

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Abstract

Background: Obesity is a potential risk factor for complications in plastic surgeries. However, the data presented by primary studies are contradictory.

Objectives: The aim of this study was to summarize and clarify the divergences in the literature to provide a better understanding of the impact of obesity in different plastic surgery procedures.

Methods: We conducted a systematic review and meta-analysis of the impact of obesity on plastic surgery outcomes. Searches were conducted in MEDLINE, LILACS, SciELO, Scopus, Embase, Web of Science, Opengrey.eu, and the Cochrane Database of Systematic Reviews. The primary outcomes assessed were surgical complications, medical complications, and reoperation rates. The secondary outcome assessed was patient satisfaction. Subgroup analysis was performed to investigate the impact of each BMI category on the outcomes.

Results: Ninety-three articles were included in the qualitative synthesis, and 91 were used in the meta-analysis. Obese participants were 1.62 times more likely to present any of the primary outcomes (95% CI, 1.48-1.77; $P < 0.00001$). The highest increase in risk among plastic surgery types was observed in cosmetic procedures (risk ratio [RR], 1.80; 95% CI, 1.43-2.32; $P < 0.00001$). Compared with normal-weight participants, overweight participants presented a significantly increased RR for complications (RR, 1.16; 95% CI, 1.07-1.27; $P = 0.0004$). Most authors found no relation between BMI and overall patient satisfaction.

Conclusions: Obesity leads to more complications and greater incidence of reoperation compared with nonobese patients undergoing plastic surgeries. However, this effect is not evident in reconstructive surgeries in areas of the body other than the breast.

Resumen

Antecedentes: La obesidad es un factor de riesgo potencial de complicaciones en las cirugías plásticas. No obstante, los datos presentados por los estudios primarios son contradictorios.

Objetivos: El objetivo de este estudio fue resumir y aclarar las divergencias en la literatura a fin de ofrecer una mejor comprensión del impacto que tiene la obesidad en diferentes procedimientos de cirugía plástica.

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The association between obesity and postoperative outcomes in a broad surgical population: A 7-year American College of Surgeons National Surgical Quality Improvement analysis

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ABSTRACT

Background: The number of obese surgical patients continues to grow, and yet obesity's association with surgical outcomes is not totally clear. This study examined the association between obesity and surgical outcomes across a broad surgical population using a very large sample size.

Methods: This was an analysis of the 2012 to 2018 American College of Surgeons National Surgical Quality Improvement database, including all patients from 9 surgical specialties (general, gynecology, neurosurgery, orthopedics, otolaryngology, plastics, thoracic, urology, and vascular). Preoperative characteristics and postoperative outcomes were compared by body mass index class (normal weight 18.5 −24.9 kg/m^2, overweight 25.0−29.9, obese class I 30.0−34.9, obese II 35.0−39.9, obese III ≥40). Adjusted odds ratios were computed for adverse outcomes by body mass index class.

Results: A total of 5,572,019 patients were included; 44.6% were obese. Median operative times were marginally higher for obese patients (89 vs 83 minutes, $P < .001$). Compared to normal weight patients, overweight and obese patients in classes I, II, and III all had higher adjusted odds of developing infection, venous thromboembolism, and renal complications, but they did not exhibit elevated odds of other postoperative complications (mortality, overall morbidity, pulmonary, urinary tract infection, cardiac, bleeding, stroke, unplanned readmission, or discharge not home (except for class III patients).

Conclusion: Obesity was associated with increased odds of postoperative infection, venous thromboembolism, and renal but not the other American College of Surgeons National Surgical Quality Improvement complications. Obese patients need to be carefully managed for these complications.

Introduction

Obesity [body mass index (BMI) ≥30 kg/m^2] affects 42.4% of adults in the United States and is increasing in prevalence over time.[1–3] Thus, a significant proportion of patients undergoing surgery are obese, and it is expected that this proportion will continue to increase.

Obesity carries an increased risk of some comorbidities.[4] However, there are conflicting reports of the association between obesity and postoperative complications. Several studies have demonstrated that obese patients are at an increased risk of postoperative intensive care unit admission,[5] pulmonary complications such as extubation failure,[6] pneumonia,[7] atelectasis,[8] pulmonary embolism,[9] technical difficulties including prolonged operating time and higher likelihood of conversion from minimally invasive to open surgery,[10] and surgical site infections.[9] However, other studies have contradicted these findings, including several showing no increased risk of pulmonary complications or operative times.[9,11]

We conducted a literature review of studies of the association between obesity and postoperative outcomes that have used the

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0039-6060/


WHAT
DO
I DO
NOW?

ADVANCED DRESSING? YES…but.

DACC TECHNOLOGY: HYDROPHOBIC DRESSING

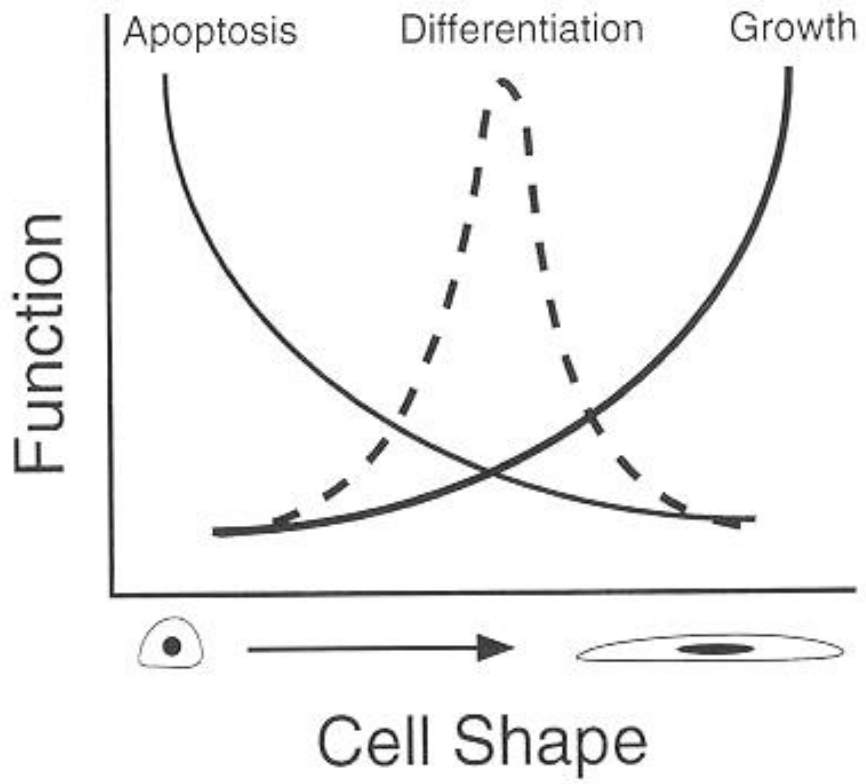
I application

Fup 2 days

Fup 14 days

NEGATIVE PRESSURE WOUND THERAPY

Mechanical forces and Mechanobiology



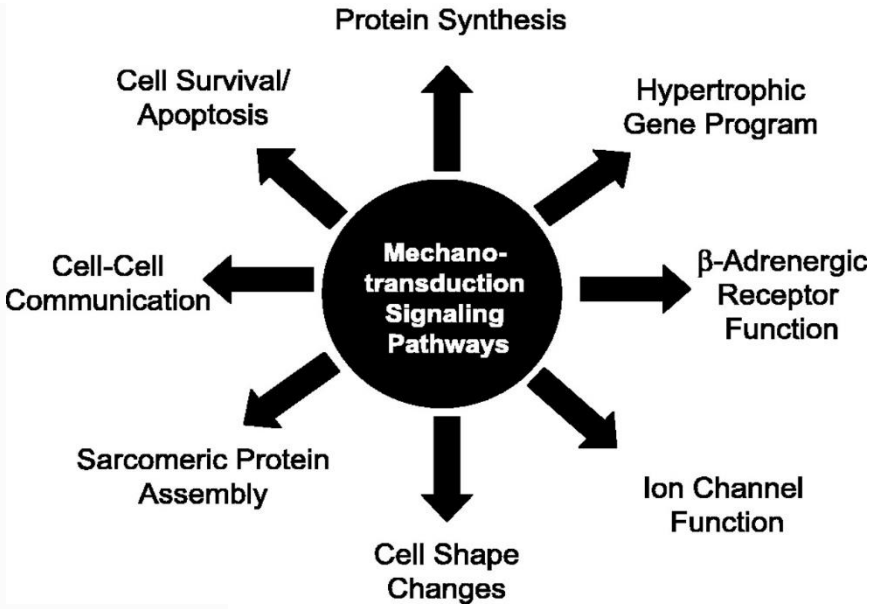
Donald Ingber,FASEB 13 Sup S5 1999

The FASEB Journal • Review

Cellular mechanotransduction: putting all the pieces together again

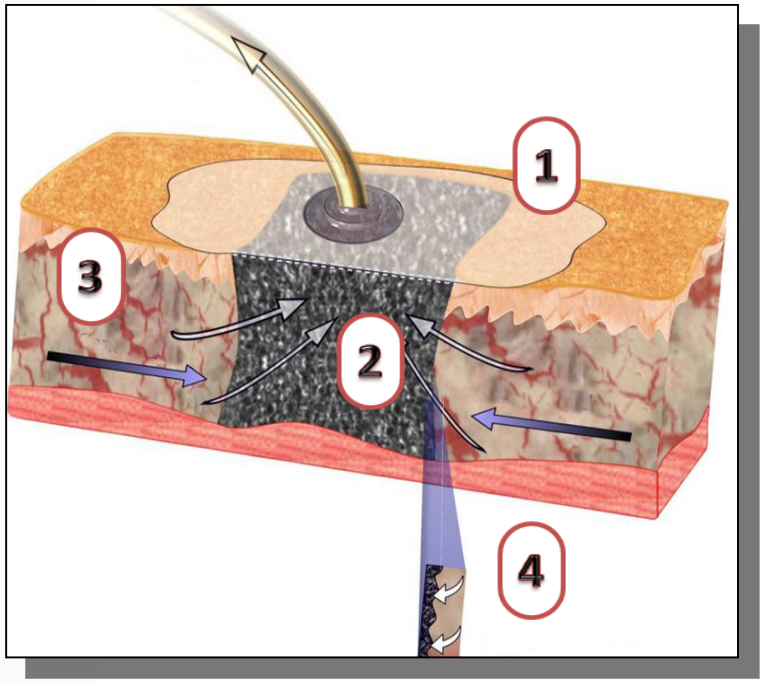
Donald E. Ingber[1]

Vascular Biology Program, Departments of Pathology and Surgery, Harvard Medical School and Children's Hospital, Boston, Massachusetts, USA



NEGATIVE PRESSURE THERAPY

1. **CONTRACTION OF THE MARGINS**
2. **MICROENVIROMENT STABILIZATION**
   - **Removal of flogistic mediators (↓ Matrix Metallo-proteinases ↑ Mitogen-Activated Kinases);**
   - **Reduction of bacteria load**
3. **EDEMA REDUCTION**
   - Reduction of exudate and interstitial fluis
   - Reduction of hydrostatic and osmotic pressure
   - Stimulation of capillary blood flow
4. **MICROMECHANICAL STIMULATION**
   - Proliferation and cellular migration
   - **Angiogenesis, perfusion, tissutal oxigenation**
   - **Rehepitelization**



Review Seminars in Cell & Developmental Biology 23 (2012) 987–992

Mechanisms of action of microdeformational wound therapy

Luca Lancerotto[a,b,d], Lauren R. Bayer[c], Dennis P. Orgill[c,d,*]

ELSEVIER

JPRAS An International Journal of Surgical Reconstruction www.JPRASurg.com

Histological evolution of chronic wounds under negative pressure therapy☆

Franco Bassetto[a,e], Luca Lancerotto[a,*,e], Roberto Salmaso[b], Laura Pandis[a], Giorgio Pajardi[c], Mauro Schiavon[d], Cesare Tiengo[a], Vincenzo Vindigni[a]

NEGATIVE PRESSURE THERAPY WITH INSTILLATION

Negative Pressure Wound Therapy with Instillation: Review of Evidence and Recommendations

Paul J. Kim, DPM, MS[1], Christopher E. Attinger[2], Brett D. Crist, MD[3], Allen Gabriel, MD[4], Robert D. Galiano, MD[5], Subhas Gupta, MD, PhD[6], John C. Lantis II, MD[7], Lawrence Lavery, DPM, MPH[8], Benjamin A. Lipsky, MD[9], Luc Teot, MD, PhD[10]

IWJ International Wound Journal

International Wound Journal ISSN 1742-4801

INVITED REVIEW

Clinical recommendations and practical guide for negative pressure wound therapy with instillation

Subhas Gupta[1], Allen Gabriel[2], John Lantis[3] & Luc Téot[4]

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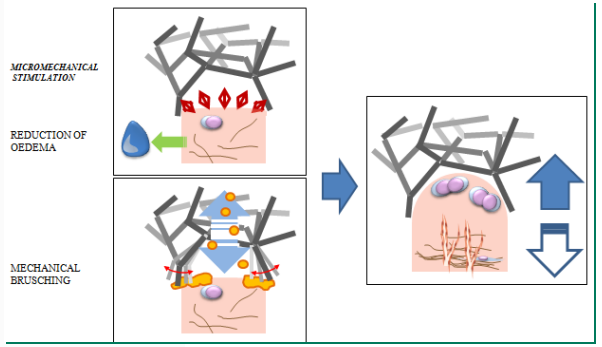
2 PeaceHealth Medical Group Plastic Surgery, Vancouver, WA, USA
3 Department of Vascular Surgery, Mount Sinai St. Luke's Roosevelt Hospital, New York, NY, USA
4 Wound Healing Unit, Montpellier University Hospital, Montpellier, France



Wounds. 2017 May 25. pii: WNDS20170525-2. [Epub ahead of print]

Effect of Negative Pressure Wound Therapy With Instillation on Bioburden in Chronically Infected Wounds.

Yang C[1], Goss SG[1], Alcantara S[1], Schultz G[2], Lantis Ii JC[1].

AHEAD OF PRINT

Management of Acute and Chronic Wounds Using Negative Pressure Wound Therapy With Instillation and Dwell Time: A Retrospective Review of a 100-Patient Cohort in Padova, Italy

Franco Bassetto, MD; Eleonora De Antoni, MD; Sandro Rizzato, MD; and Carlotta Scarpa, MD, PhD

ABSTRACT

Introduction. The presence of debris covering a wound surface significantly impedes progression toward closure. Negative pressure wound therapy with instillation and dwell time (NPWTi-d) of topical wound solutions is a versatile tool that can be applied to various wound types to promote wound healing. At the University Hospital of Padova in Padova, Italy, NPWTi-d has been incorporated into wound management plans that include debridement and antibiotic therapy, as necessary, for a diverse population of patients with open wounds, including acute, chronic, and infected wounds. **Objective.** A retrospective analysis of 100 patients (53 male, 47 female; age range, 22–95 years) who underwent NPWTi-d was performed, and key healing outcomes observed in subgroups differentiated by sex, wound etiology, initial wound size, and topical instillation solution were reported. **Materials and Methods.** Wound types included vascular ulcers, surgical wounds, dehiscences, and trauma; anatomic location of the wounds varied. Negative pressure wound therapy with instillation (0.05% sodium hypochlorite, normal saline, or 0.25% acetic acid) was implemented with a dwell time of 3 minutes to 10 minutes, followed by a negative pressure cycle length of 2 hours to 3.5 hours at –75 mm Hg to –125 mm Hg. Dressings were changed approximately every 3 days. **Results.** After a median of 11 days (range, 1–35 days), the wound surface area significantly decreased (P <.0001), percentage of infected wounds declined from 72% to 46%, and wound closure was attained in 91% of cases. A significant reduction in wound surface area was detected in both sexes, small- and medium-sized wounds, vascular ulcers, surgical wounds, dehiscences, trauma wounds, and pressure ulcers (P <.05). This effect was detected in wounds regardless of topical instillation solution (P <.0001). **Conclusions.** This study showed that NPWTi-d is a valuable treatment option in a variety of circumstances and can help the clinician achieve a range of therapy goals based on individual patient needs.

KEY WORDS

negative pressure wound therapy with instillation and dwell time, acute wounds, chronic wounds, wound infection

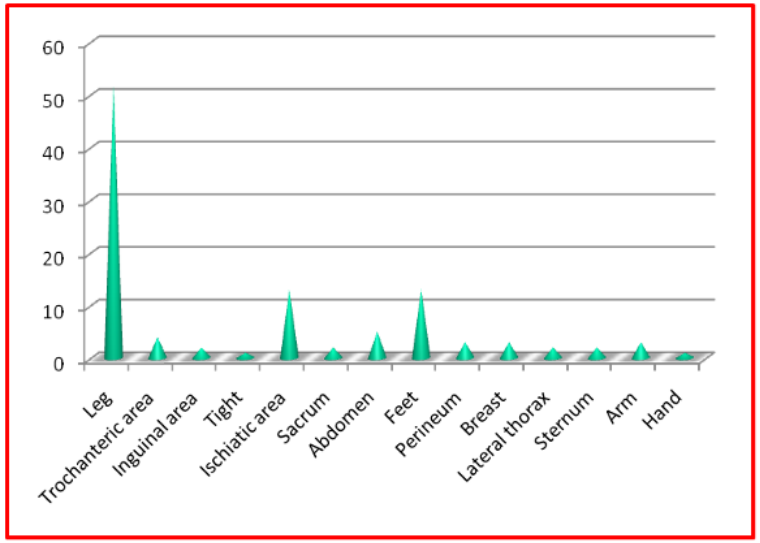
INDEX

Wounds Epub 2021 August 14

The presence of devitalized tissue and slough in an open wound can be a contributing factor in a prolonged inflammatory response and delayed wound healing.[1] Owing to its viscous texture, slough can be difficult to separate from healthy tissue. One method by which slough and soft infectious materials can be gently removed from the wound bed is negative pressure wound therapy with instillation and dwell time (NPWTi-d), which enables automated delivery of topical solutions to remove exudate and debris from the wound surface.[2] Desired therapeutic outcomes of NPWTi-d include wound cleansing, promotion of granulation tissue growth, and wound bed preparation for closure.[3-5] This study examines the use of NPWTi-d in a heterogeneous cohort of patients receiving care for various wound types at a hospital in Padova, Italy. Key healing outcomes in each wound category are reported.

MATERIALS AND METHODS

This study is an observational retrospective review of 100 patients with wounds managed with NPWTi-d (V.A.C. VERAFLO Therapy; 3M) from January 2013 through December 2017. Deidentified data were collected from medical records from a single institution. Patient consent to treatment was acquired in accordance with institutional and governmental guidelines. This study did



THE AREAS

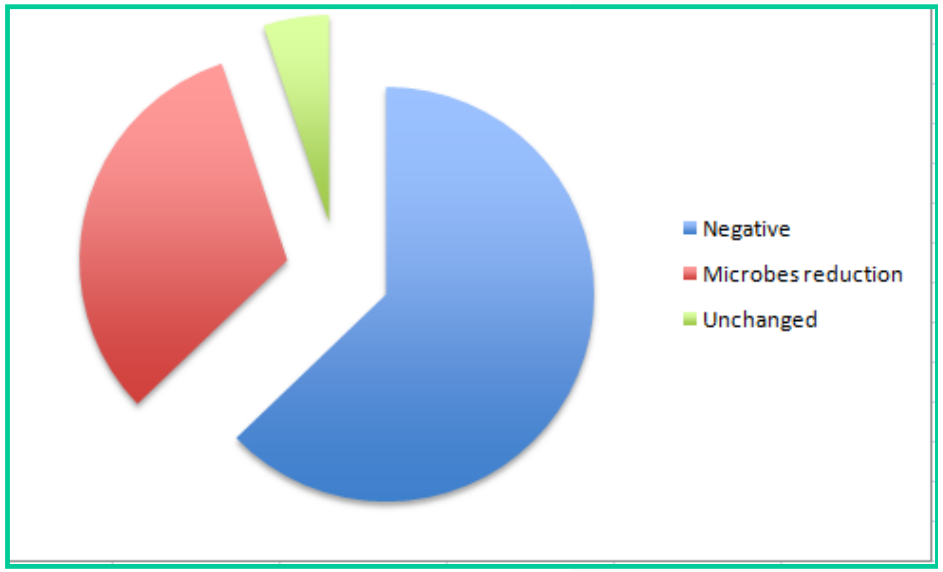
Setting	n=100
Negative pressure (median, range)	125 (75-125) mmHg
Solution (n, %)	
0.05% sodium hypochlorite	50 (50.0%)
Normal saline	30 (30.0%)
Acetic acid	20 (20.0%)
Dwell time (median, range)	10 (3-10) minutes
Cycle length (median, range)	3.5 (2-3.5) hours

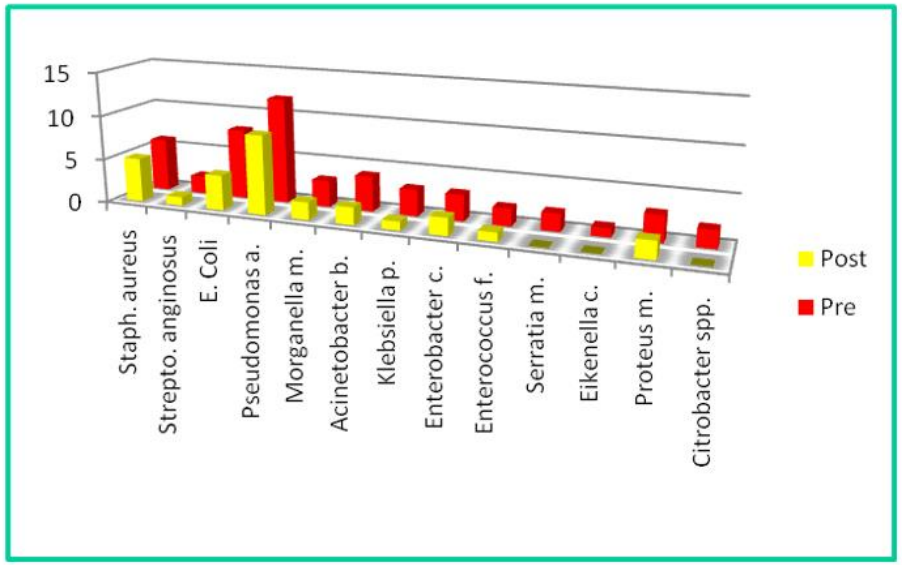
NPWTI FEATURES

Management of Acute and Chronic Wounds Using Negative Pressure Wound Therapy With Instillation: A Retrospective Review of a 100-Patient Cohort in Padua, Italy

F. Bassetto, E. De Antoni, S. Rizzato, C. Scarpa

Wounds. 2021 Aug 14. doi: 10.25270/wnds/081421.01.





EFFICACY ON SWABS

SOME CLINICAL CASES

NEGATIVE PRESSURE THERAPY WITH INSTILLATION IN CHRONIC WOUNDS IN OBESE PATIENT

POST BREAST REDUCTION

NPWTi with saline for Staphylococcu aureus

Preop
(after 7 days NPWTi)

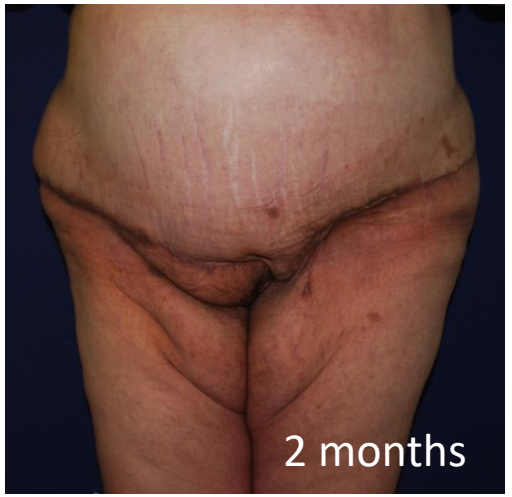
Postop
(after 3 months)

Post surgical Abdominal Infection after Abdominoplasty

NPWTi for Serratia Marescens

Scarpa C, Bassetto F, Vindigni V ***Management of Severe Wound Infections After Body Contouring Procedures in Post-Bariatric Patients With Negative-Pressure Wound Therapy With Instillation*** ***Plast Reconstr Surg. 2022 Apr 1;149(4):839e-841e***

Fournier's Syndrome in mega-obese
Exposed bladder and poor debridement
NPWTi for Escherichiae Coli



NEGATIVE SWABS

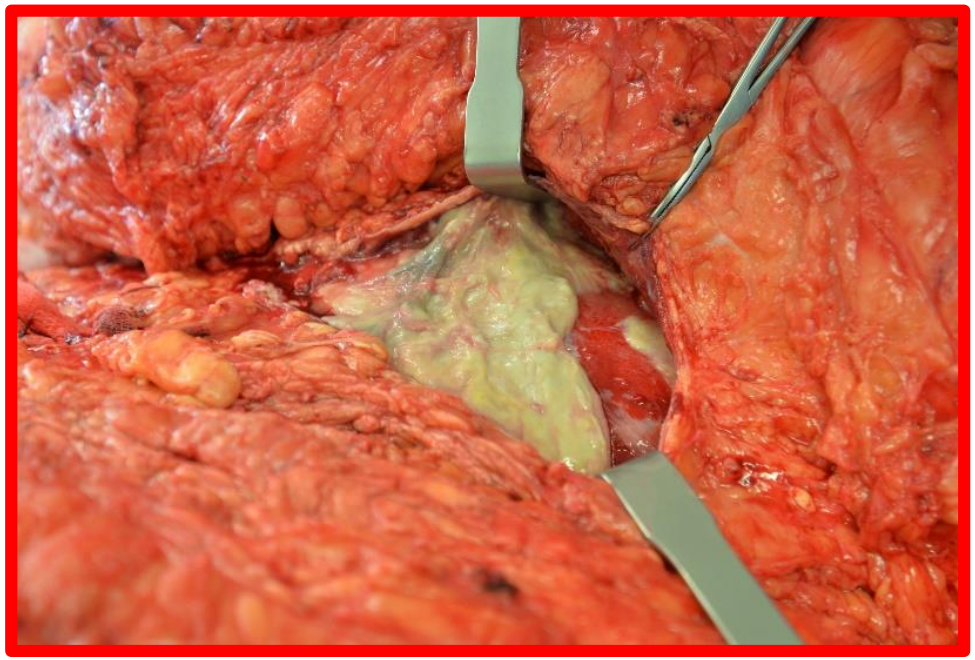
short treatment time
improved treatment safety

Vindigni V, Scarpa C, Dalla Venezia E, Bassetto F. Fournier's Gangrene and Negative Pressure Wound Therapy: A Case Report. Wounds. 2016 Oct;28(10):E41-E43.

Infection in mega-obese Megaabdominoplasty and NPWTi for Escherichiae Coli


education

The diagnosis, management and prevention of intertrigo in adults: a review



Infection in mega-obese Megaabdominoplasty and NPWTi for Escherichiae Coli


education

The diagnosis, management and prevention of intertrigo in adults: a review

NEGATIVE SWABS AND BIOPSY AFTER 10 DAYS

Infection in mega-obese Megaabdominoplasty and NPWTi for Klebsiella Pneumoniae


education

The diagnosis, management and prevention of intertrigo in adults: a review

Infection in mega-obese Megaabdominoplasty and NPWTi for Klebsiella Pneumoniae


education

The diagnosis, management and prevention of intertrigo in adults: a review

NEGATIVE SWABS AND BIOPSY AFTER 10 DAYS

Yes…. but to prevent not to treat

NEGATIVE PRESSURE THERAPY FOR SINGLE USE

Closed Incision Negative Pressure Therapy (CiNPT)

AIM

- **IMPROVEMENT OF SCAR QUALITY**
- **EASIER POST OPERATIVE MANAGEMENT (FOLLOW UP)**
- **CONTROL OF INFLAMMATION AND EXUDATE**
- **REDUCTION OF COMPLICATION IN HIGH RISK PATIENTS**

Aesth Plast Surg (2021) 45:1653–1659
https://doi.org/10.1007/s00266-020-02122-1

ISAPS

ORIGINAL ARTICLE — BODY CONTOURING

The Role of Portable Incisional Negative Pressure Wound Therapy (piNPWT) in Reducing Local Complications of Post-bariatric Brachioplasty: A Case-Control Study

Federico Facchin[1] · Andrea Pagani[2] · Paolo Marchica[1] · Laura Pandis[1] · Carlotta Scarpa[1] · Tito Brambullo[1] · Franco Bassetto[1] · Vincenzo Vindigni[1]

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Abstract

Background Due to the great impact of bariatric surgery on the overweight epidemic, the number of post-bariatric body-contouring procedures is constantly increasing worldwide. The portable incisional negative pressure wound therapy (piNPWT) is a promising medical device for accelerating wounds closure and controlling post-operative complication, which have been shown promising results in post-bariatric population. We aimed to evaluate the role of piNPWT in optimizing wound healing and controlling post-operative complications after a post-bariatric brachioplasty.

Patients and Methods 26 post-bariatric female patients who underwent a brachioplasty followed by either a piNPWT (14 cases) or a standard wound treatment (12 controls) were analyzed. The number of post-operative dressing changes, the rate of local post-operative complications (re-operation, hematoma and serosa development, dehiscence and necrosis), the time to dry as well as the scar quality and hospitalization length were evaluated.

Results None of the patients prematurely stopped treatment with piNPWT due to intolerance. The piNPWT patient group showed a significant lower healing time as well as a significant reduction of the number of post-operative dressing changes and hospital stay. Despite the scarring process was excellent from the functional point of view in the long term, we noticed a higher rate of hyperchromic scarring at 90 days after surgery.

Conclusion The piNPWT is a cost-effective and user-friendly medical tool that increase and promote wound healing. We suggest the use of this device in post-bariatric patients who undergo a brachioplasty, especially if there is the need to minimize the number of post-operative dressing changes.

Level of Evidence IV This journal requires that authors assign a level of evidence to each article. For a full description of these evidence-based Medicine ratings, please refer to Table of Contents or the online Instructions to Authors www.springer.com/00266.

Keywords Body-contouring · Post-bariatric patients · Surgical site complications · Obesity · Brachioplasty · Wound care

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Springer

NEGATIVE PRESSURE THERAPY FOR SINGLE USE

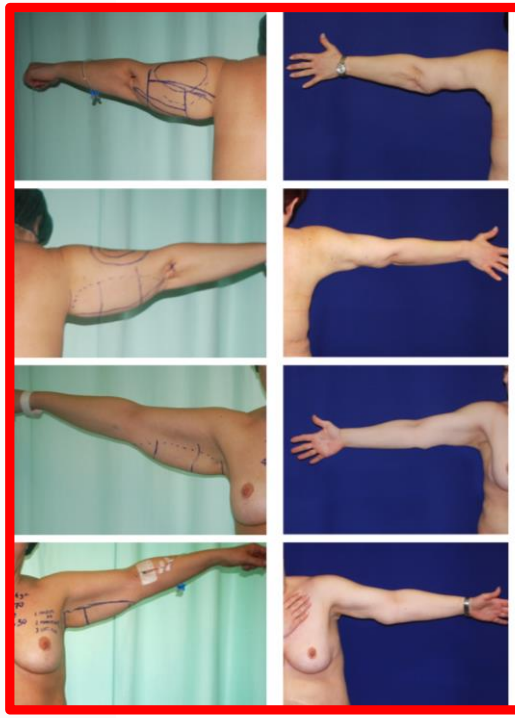
Closed/Portable Incision Negative Pressure Therapy (Ci/piNPT)

44 YO

GASTRIC BENDAGE

BMI 47→30
140kg→70kg

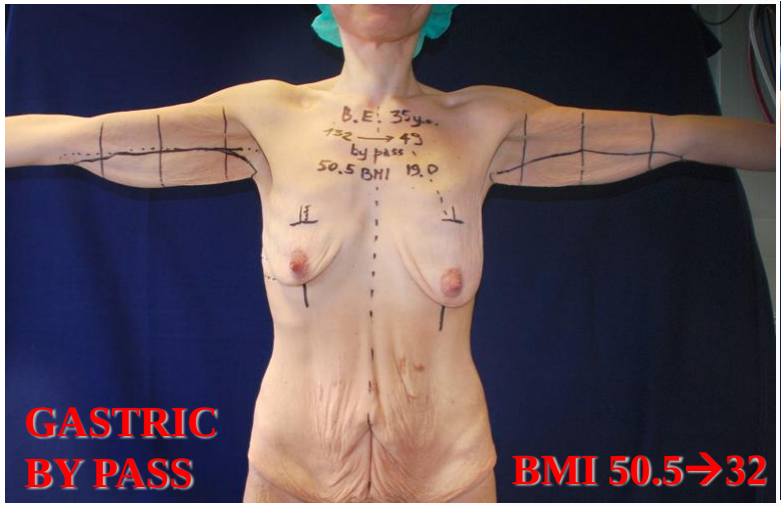
TIPO III
LIPOSUCTION +
DERMOLIPECTOMY

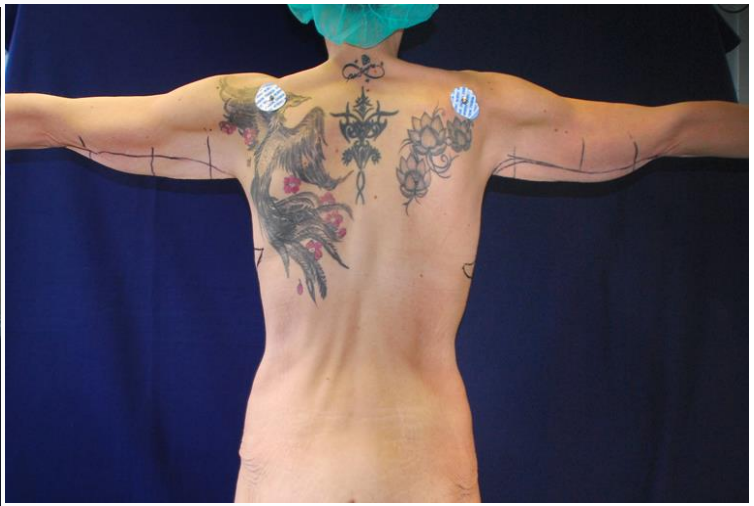


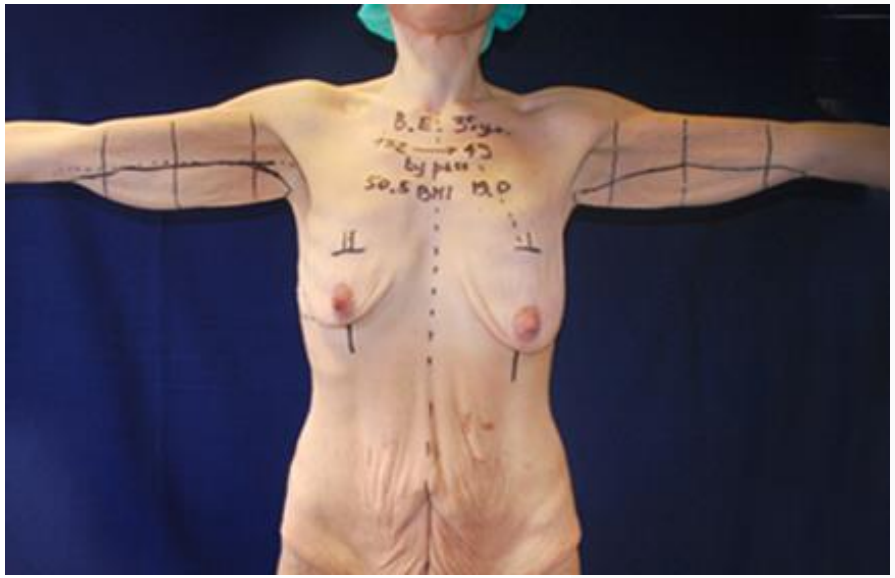
6 MONTHS FUP

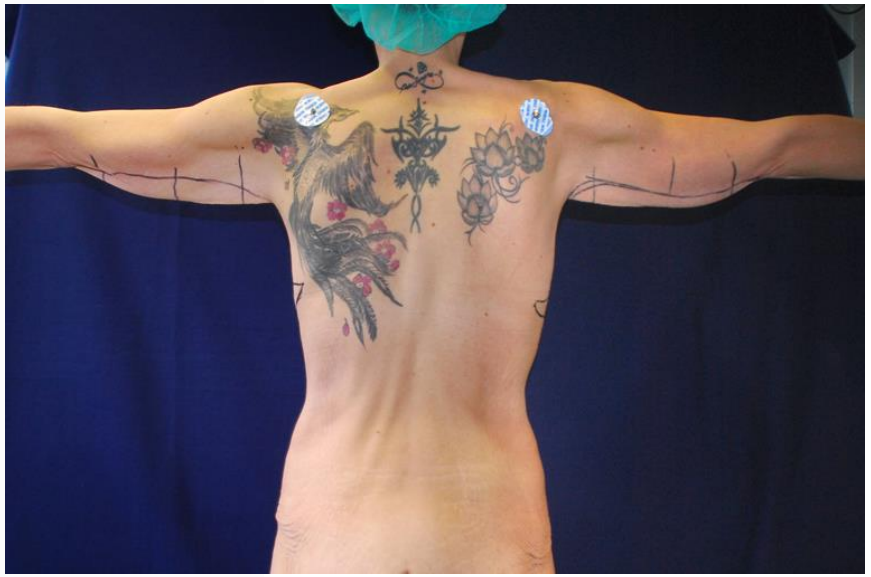
Closed Incision Negative Pressure Therapy (CiNPT)

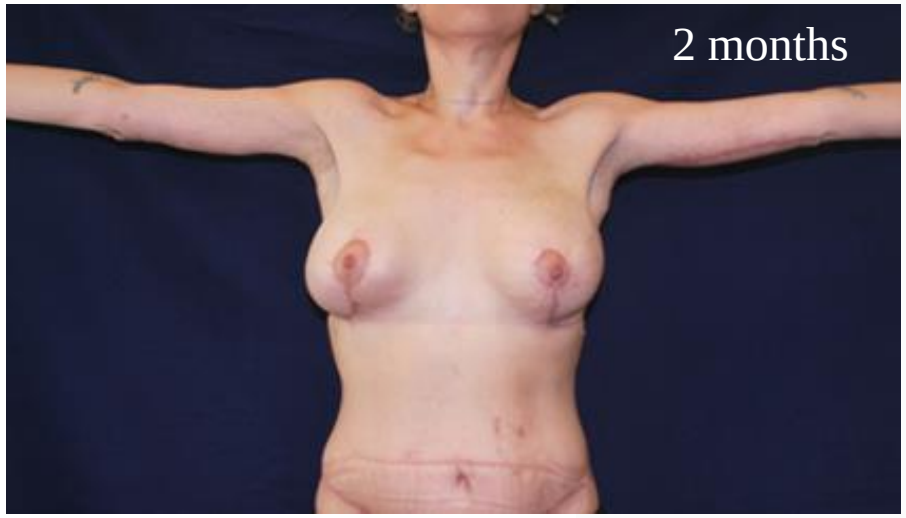
Post bariatric patients







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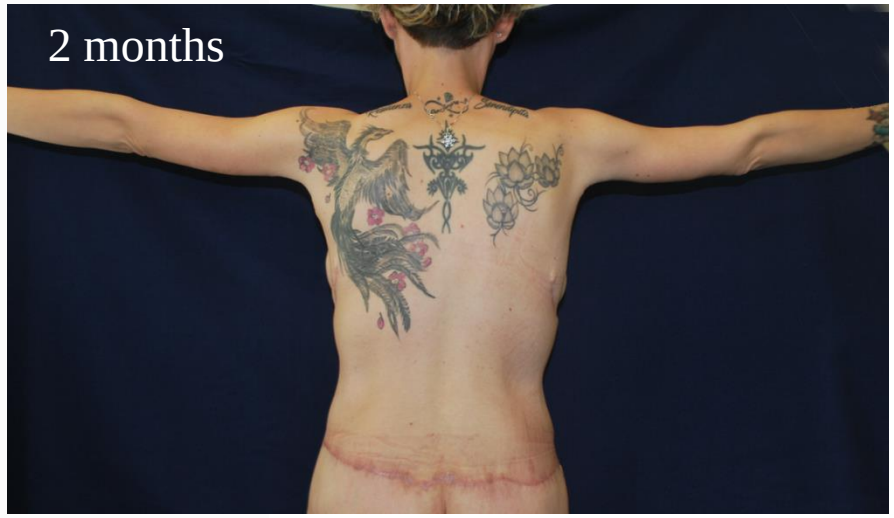
2 months


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Grazie