

# No Drain Abdominoplasty: Evidence & Execution

*Karol A Gutowski, MD, FACS*

plastic  
surgery

THE MEETING



AMERICAN SOCIETY OF PLASTIC SURGEONS



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Orlando

OCTOBER 6 - 10 2017



# Disclosures

Suneva Medical – Instructor

Merz – Advisory Board

NO financial interests in any suture company

Will use brand names due to lack of  
distinguishing generic names

# Drain Free Procedures

- Breast
  - Reduction
  - Mastopexy
  - Augmentation
- Trunk
  - Abdominoplasty
  - Body lift
- Extremity
  - Arm lift
  - Thigh lift (depends)



# Drains

- “Standard of care” for many procedures
- Benefit: often NOT proven
- Downside: pain, cost, less mobility, anxiety, phone calls, infection, scars
- Not substitute for good surgical technique

# Evidence?

2013

RECONSTRUCTIVE

## Evidence-Based Value of Subcutaneous Surgical Wound Drainage: The Largest Systematic Review and Meta-Analysis

Aaron M. Kosins, M.D.,  
M.B.A.

Thomas Scholz, M.D.

Mine Cetinkaya, B.S.

Gregory R. D. Evans, M.D.

*Orange, Calif.; and Durham, N.C.*

**Background:** The purpose of this study was to determine the evidenced-based value of prophylactic drainage of subcutaneous wounds in surgery.

**Methods:** An electronic search was performed. Articles comparing subcutaneous prophylactic drainage with no drainage were identified and classified by level of evidence. If sufficient randomized controlled trials were included, a meta-analysis was performed using the random-effects model. Fifty-

**Conclusions:** Many surgical operations can be performed safely without prophylactic drainage....breast reduction, abdominal wounds, femoral wounds..... Furthermore, surgeons should consider not placing drains prophylactically in obese patients.



# Drains in Breast Reduction



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PLASTIC SURGEONS®

## Evidence-based Clinical Practice Guideline: Reduction Mammoplasty

*Drains.* Although wound drains can minimize the amount of fluid at the surgical site, evidence indicates that the use of drains neither increases nor decreases postoperative complications, causes greater patient discomfort, and possibly increases the length of the hospital stay.<sup>27-29</sup>

**Recommendation:** In standard reduction mammoplasty procedures, evidence indicates that the use of drains is not beneficial.

However, if liposuction is used as an adjunctive technique, the decision to use drains should be left to the surgeon's discretion.

**Level I, II Evidence: Grade A**



# Patient's Perception of Drains

**RealSelf**[Ratings](#)[Ask a Doctor](#)[Doctor Finder](#)

[Tummy Tuck](#) : [Reviews](#) [Photos](#) [Q&A](#) [Forum](#) [Doctors](#)

[Home](#) > [Tummy Tuck](#) > [Forum](#) > [Recovering MARCH Tummy Tuckers!](#)

## Tummy Tuck Forum

**94%**  
WORTH IT RATING  
2,218 Reviews

  
[Average Tummy Tuck Cost](#): \$8,331  
[Learn about Tummy Tuck](#)

[Post to Forum](#)

  
[View Before and Afters](#)

### Recovering MARCH Tummy Tuckers!

By [3boys 1princess](#) on 07 Apr 2011

Thought I would start another thread for recovery questions and comments. Here goes the first one... How long have you had your drains or how long did you have them? I am 10 days out and still have both. NOT happy about that. Think that I am doing too much, but LIFE goes on. Was supposed to get 1 out tomorrow but drainage jumped back up to 40 today. YUCK!! Hope everyone is recovering nicely and if you have any questions or comments POST THEM HERE!!

# Clinical Experience

- 281 consecutive abdominoplasties
  - 54 circumferential
  - 171 with abdominal flap liposuction
  - 262 with flank liposuction
  - 76 massive weight loss
  - 230 outpatient
- Tumescant technique
- *Modified Progressive Tension Suture Technique*
  - Bidirectional barbed sutures
  - 8 to 10 minutes
  - No drains
  - Compression garment +/- binder for 2 weeks



# Results

- 1 epigastric seroma
  - One aspiration
- 9 lower abdominal seromas
  - Multiple aspirations
  - 4 required drain (SeromaCath placed in office)
- 1 major wound dehiscence
- 2 hematomas drained in OR
- 2 infected seromas
  - Incised & drained

# Pivotal Publication

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## Techniques in Cosmetic Surgery

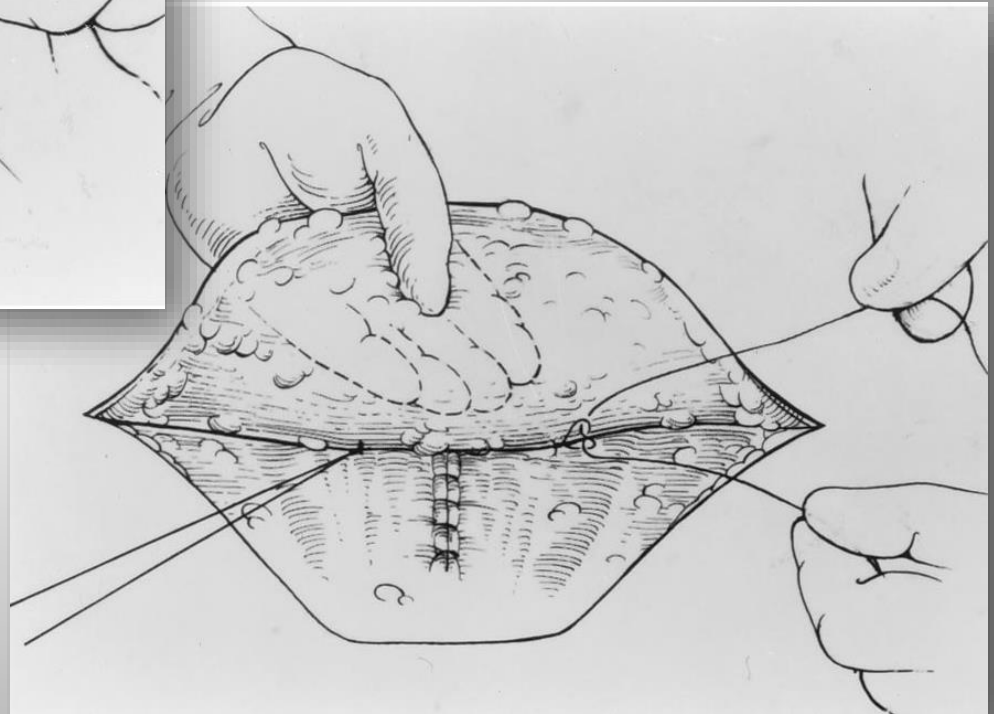
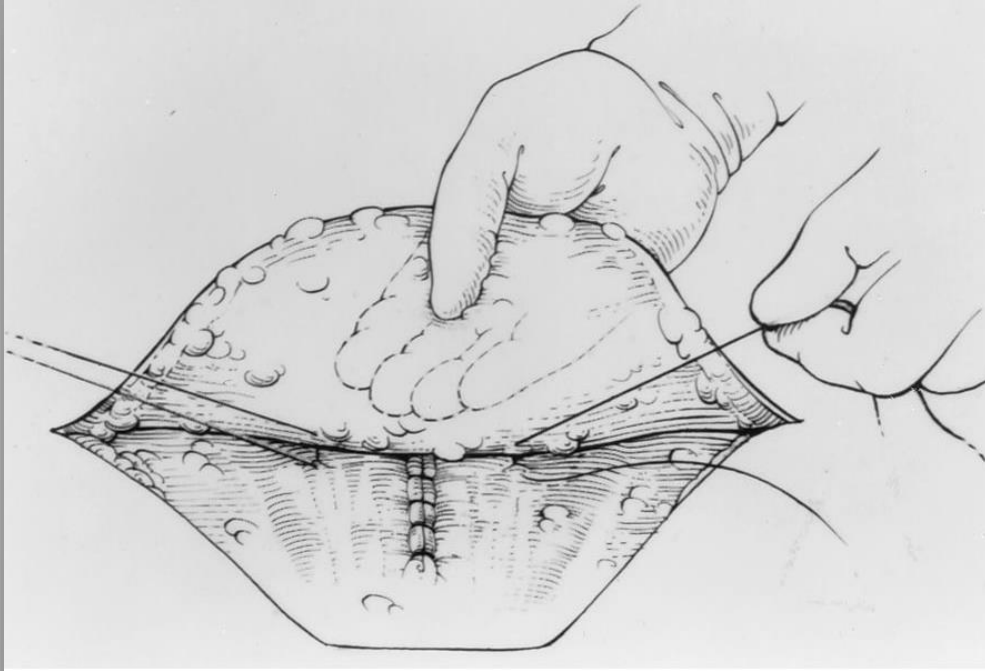
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### Progressive Tension Sutures: A Technique to Reduce Local Complications in Abdominoplasty

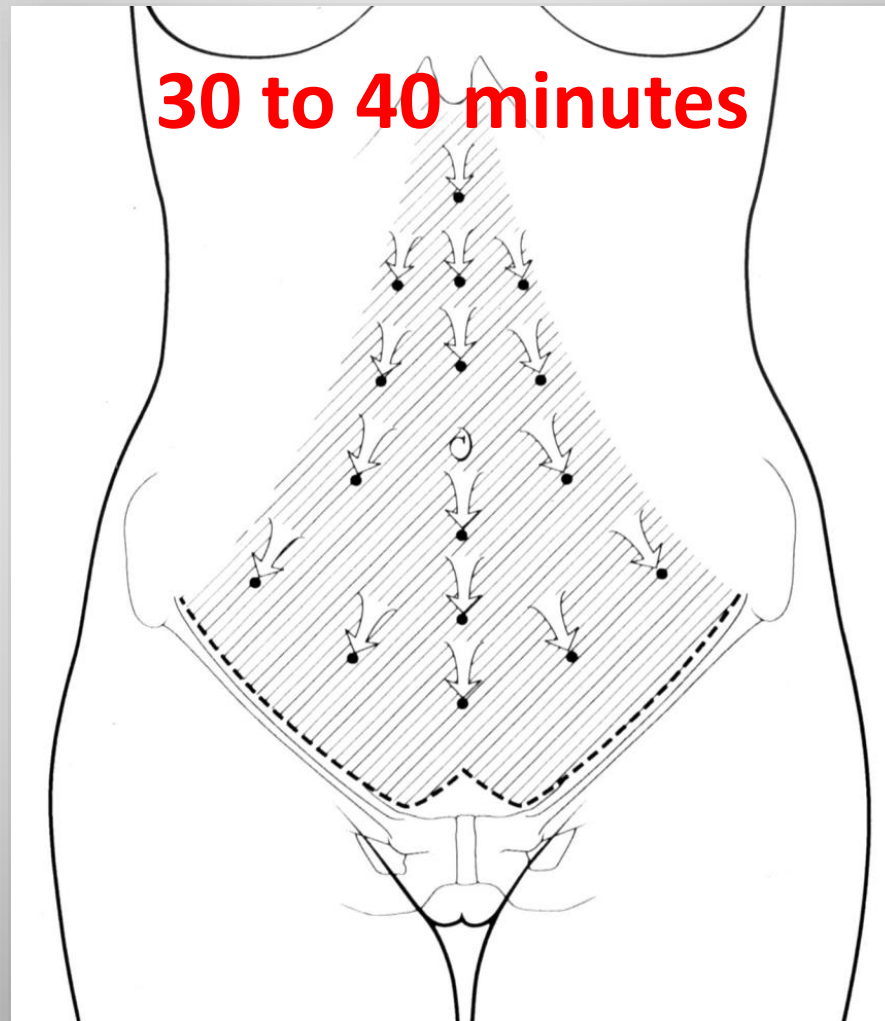
Harlan Pollock, M.D., and Todd Pollock, M.D.

*Dallas, Texas*

# Individual Sutures



# Progressive Inferior Tension



# Introduction of Barbed PTS

## Body Contouring

### Abdominoplasty With Progressive Tension Closure Using A Barbed Suture Technique

*ASJ 2009*

*Jeremy P. Warner, MD; and Karol A. Gutowski, MD*

## IDEAS AND INNOVATIONS

### Use of Absorbable Running Barbed Suture and Progressive Tension Technique in Abdominoplasty: A Novel Approach

*Allen D. Rosen, M.D.  
Moncklair, N.J.*

*PRS 2010*



# Subsequent Publications

## Body Contouring

### Prevention of Seroma After Abdominoplasty

Gertrude M. Beer, MD; and Heinz Wallner, MD

*Aesthetic Surgery Journal*  
30(3) 414–417  
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journalsPermissions.nav](http://www.sagepub.com/journalsPermissions.nav)  
DOI: 10.1177/1090820X10374116  
[www.aestheticsurgeryjournal.com](http://www.aestheticsurgeryjournal.com)  
SAGE

#### Abstract

**Background:** Seroma is one of the most troubling complications that shearing forces between the two separated abdominal patient until the layers are sufficiently adhered may be a  
**Objective:** The authors examine the association between  
**Methods:** This retrospective study included 60 patients 48 hours (group 2). For thromboembolism prophylaxis follow-up for detection of seroma continued for at least  
**Results:** Mobilization after 24 hours led to a seroma  
**Conclusions:** For abdominoplasty patients with a low risk of chemical and mechanical thromboembolism prophylaxis

## Body Contouring

### Reducing Seroma in Outpatient Abdominoplasty: Analysis of 516 Consecutive Cases

John W. Antonetti, MD, and Alfred R. Antonetti, MD

*Aesthetic Surgery Journal*  
30(3) 418–427  
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DOI: 10.1177/1090820X10372048  
[www.aestheticsurgeryjournal.com](http://www.aestheticsurgeryjournal.com)  
SAGE

#### Abstract

**Background:** Over the past 30 years, the preferred technique regarding the surgical and postoperative approaches that by  
**Objective:** The authors evaluate their 28-year experience of (drains) for reducing the overall complication rate, most  
**Methods:** A retrospective review was conducted of 517 patients groups based on operative setting, postoperative care, and  
**Results:** The authors found that the last group of patients, as an outpatient procedure, had the lowest incidence of seroma 9.6% in early groups, when abdominoplasty was performed without the placement of progressive tension sutures, but was  
**Conclusions:** Abdominoplasty can be safely performed when surgical time is limited. Despite controversy in the previous studies without drains dramatically decreases overall complication

426

*Aesthetic Surgery Journal* 30(3)

## Commentary

Karol A. Gutowski, MD, FACS

DOI: 10.1177/1090820X10371752

Although seroma after abdominoplasty is rarely a cause of significant morbidity or reoperation, its presence does result in increased patient visits and occasional discomfort due to percutaneous aspirations or additional drain placement. Rarely, a seroma may contribute to infection, inci-

Are other options available to minimize seroma formation without the additional cost and risk of prolonged immobilization? Starting with Pollock and Pollock's first patient series,<sup>2</sup> reports have been published supporting the role of internal progressive tension sutures in not only minimizing seroma formation, but also eliminating the need for drain placement.<sup>3,4,11</sup> This technique is simple and

# Subsequent Publications

## Body Contouring

### Use of Quilting Sutures During Abdominoplasty to Prevent Seroma Formation: Are They Really Effective?

Marcos Sforza, MD; Rodwan Husein; Katerina Andjelkovic, MD, PhD;  
Paulo Cesar Rozental-Fernandes, MD; Reza Javanmard, MD, PhD;  
Milan Jovanovic, MD, PhD

## Body Contouring

### Decrease in Seroma Rate After Adopting Progressive Tension Sutures Without Drains: A Single Surgery Center Experience of 451 Abdominoplasties Over 7 Years

Luis H. Macias, MD, FACS; Edwin Kwon, MD; Daniel J. Gould, MD, PhD; Michelle A. Spring, MD, FACS; and W. Grant Stevens, MD, FACS

# Tissue Adhesives

## Body Contouring

### Effect of Tissue Adhesives on Seroma Incidence After Abdominoplasty: A Systematic Review and Meta-Analysis



Marwan W. Nasr, MD; Samer F. Jabbour, MD; Rachad I. Mhawej, MD; Joseph S. Elkhoury, MD; and Fadi H. Sleilati, MD

- Lack of high-quality evidence to support TAs to prevent seroma after abdominoplasty
- Well-designed RCTs are needed

# Barbed Suture Technology

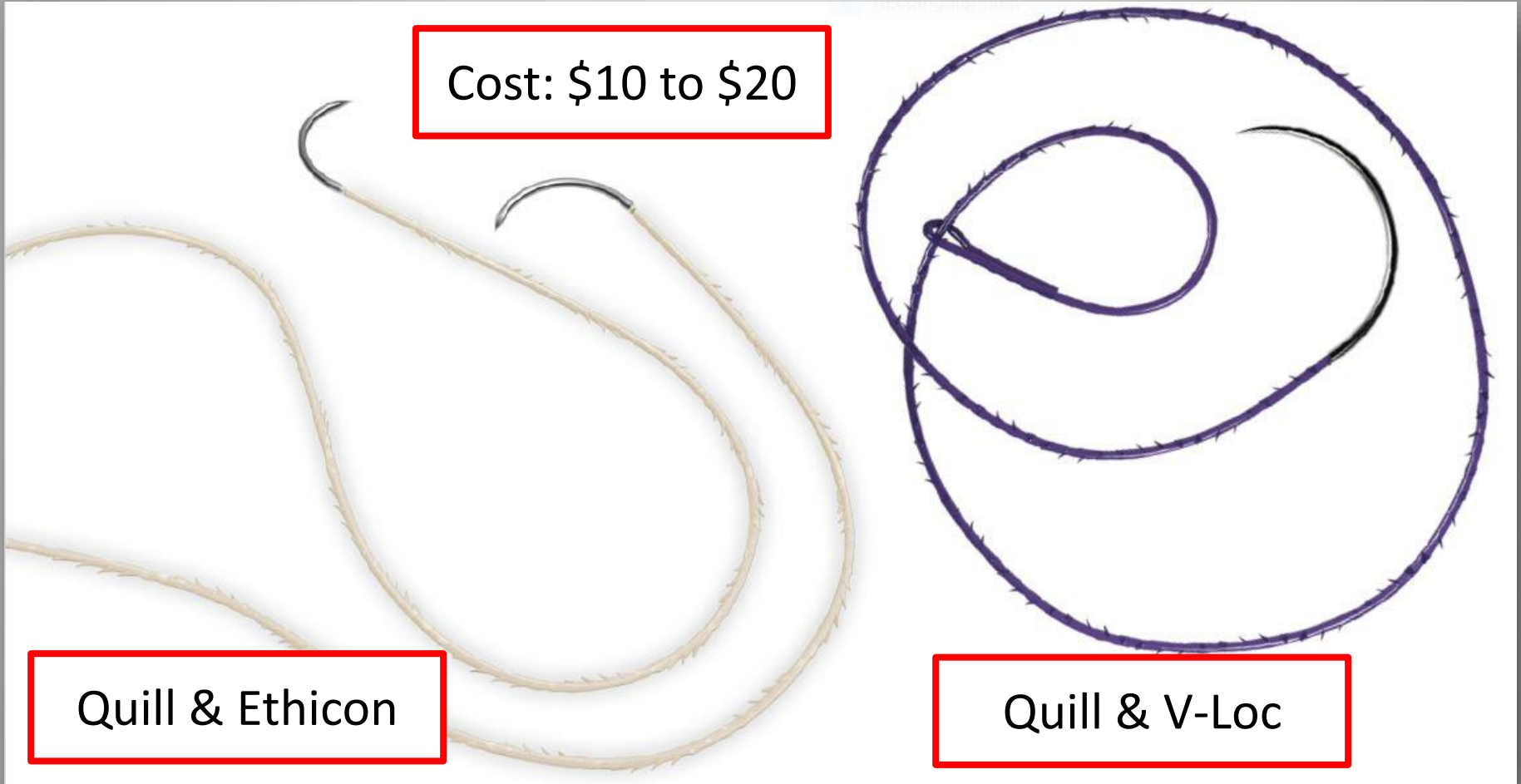


# Barbed Suture Technology

Cost: \$10 to \$20

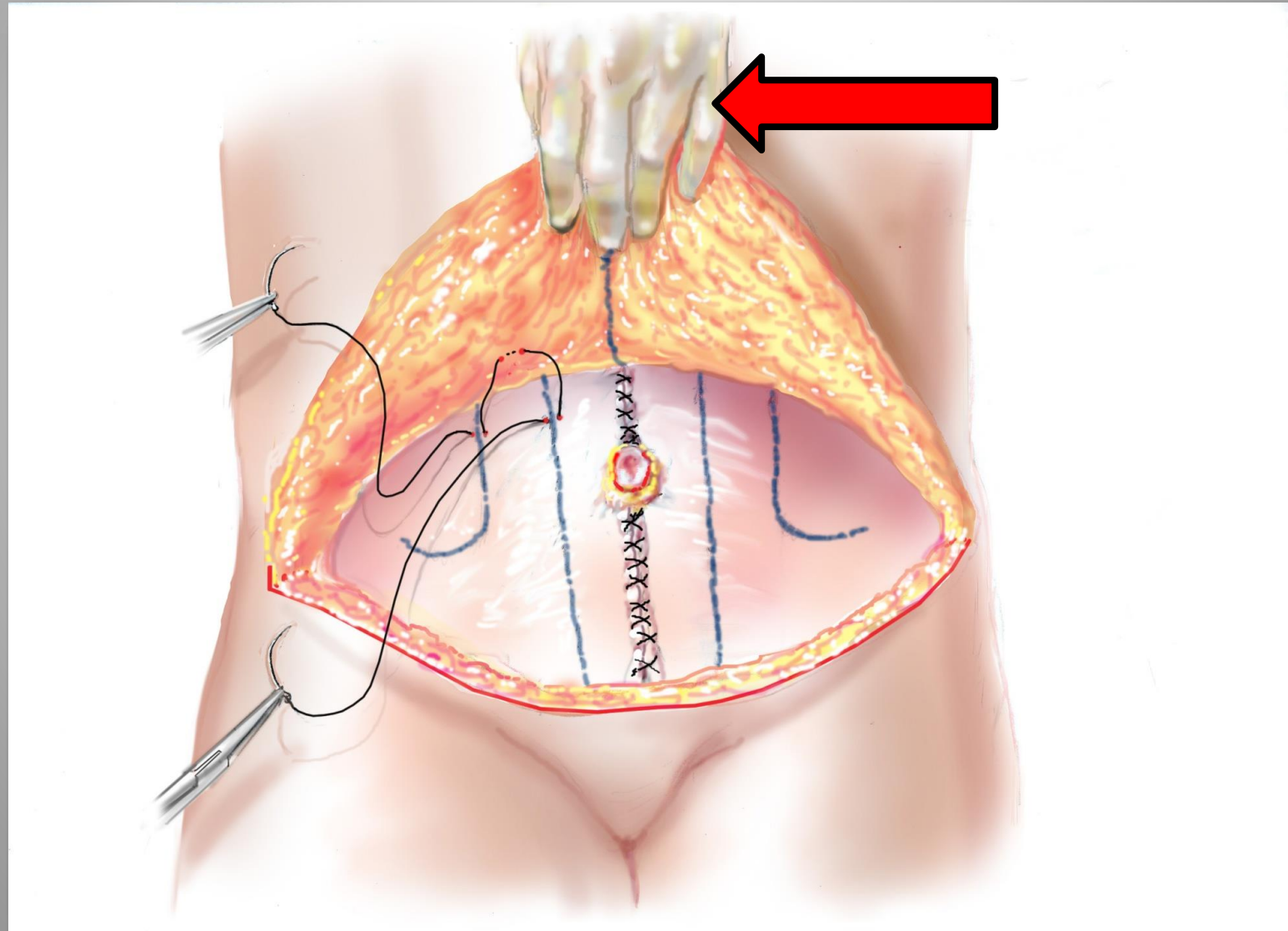
Quill & Ethicon

Quill & V-Loc



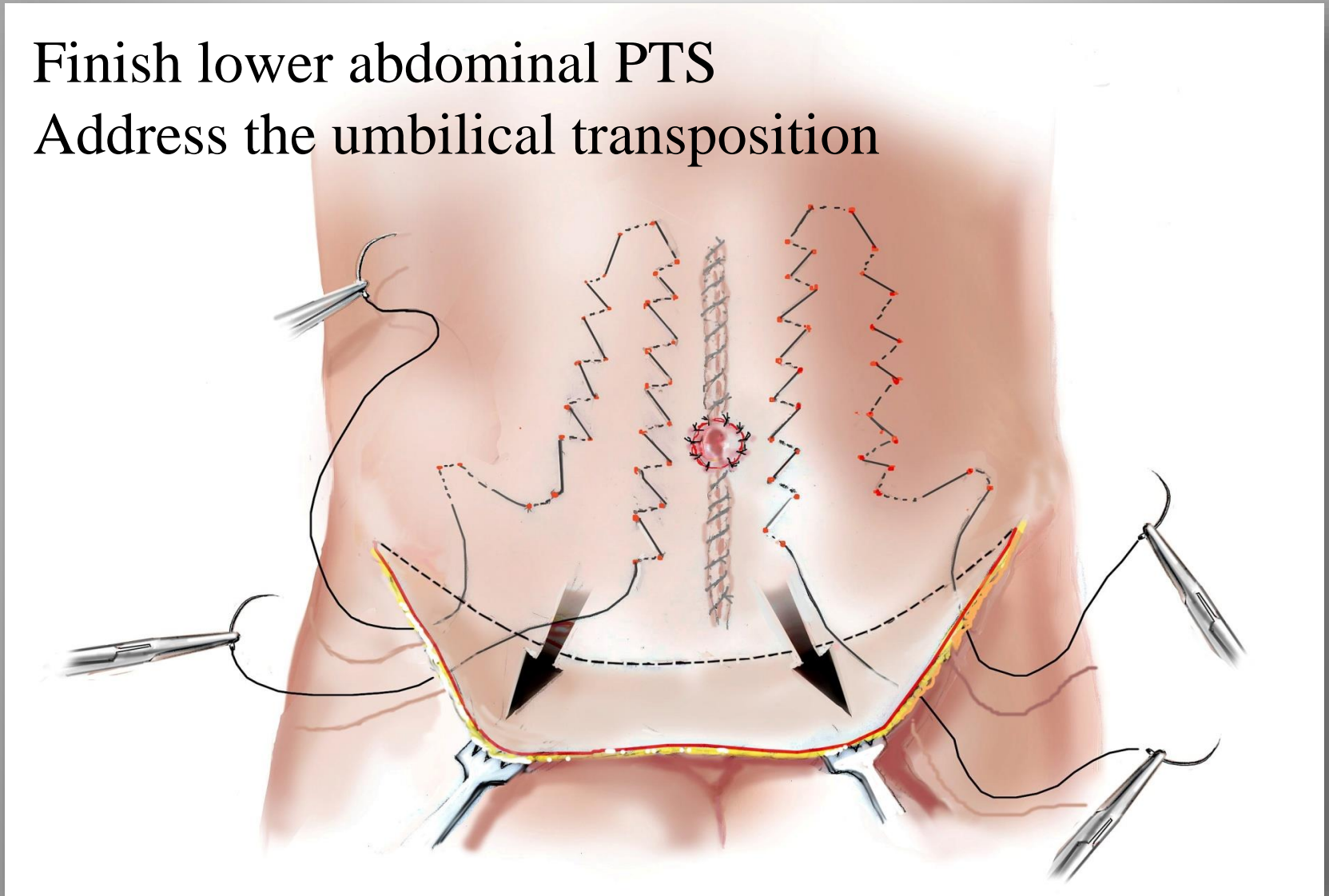


# Barbed Progressive Tension Sutures

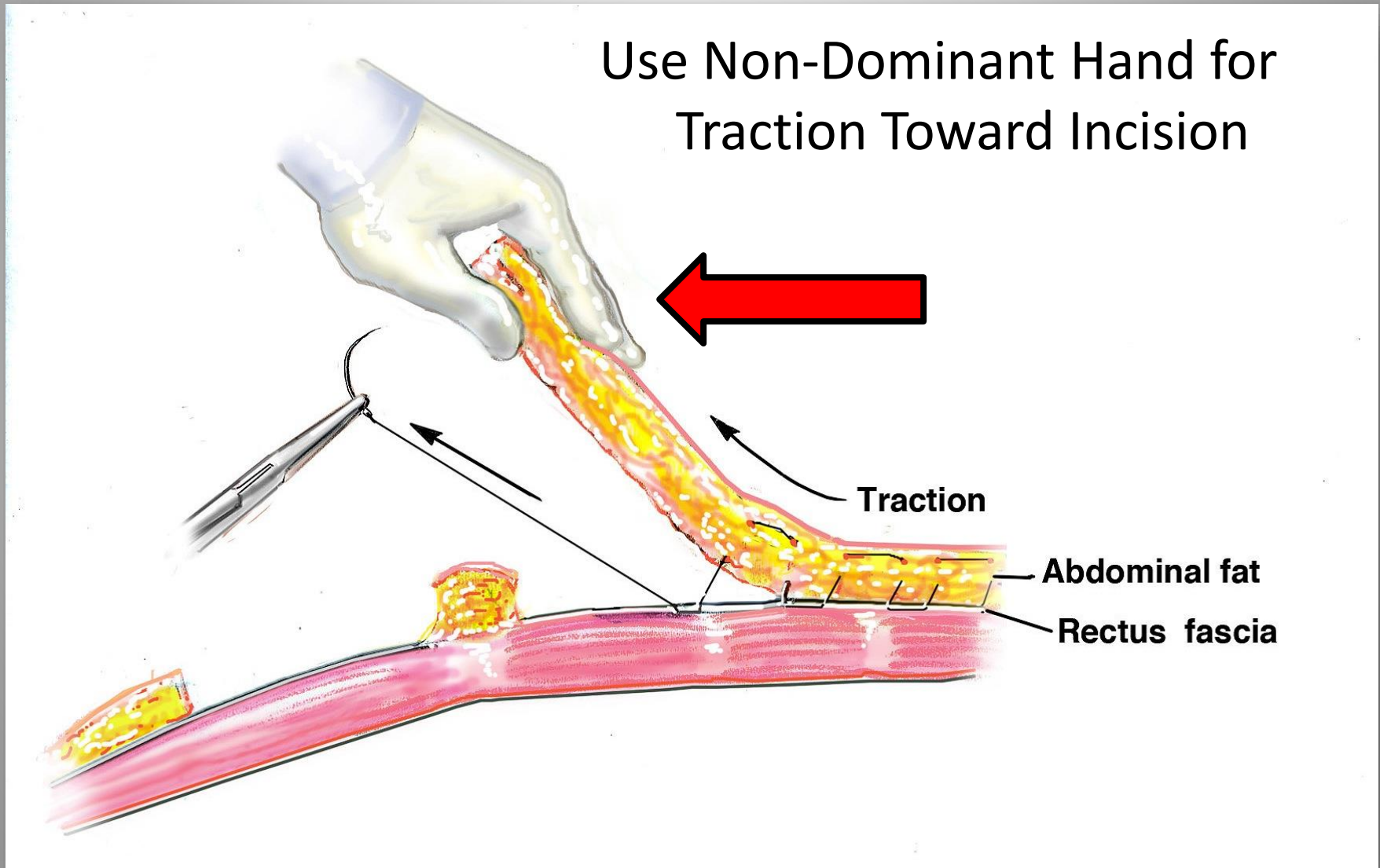


# Barbed Progressive Tension Sutures

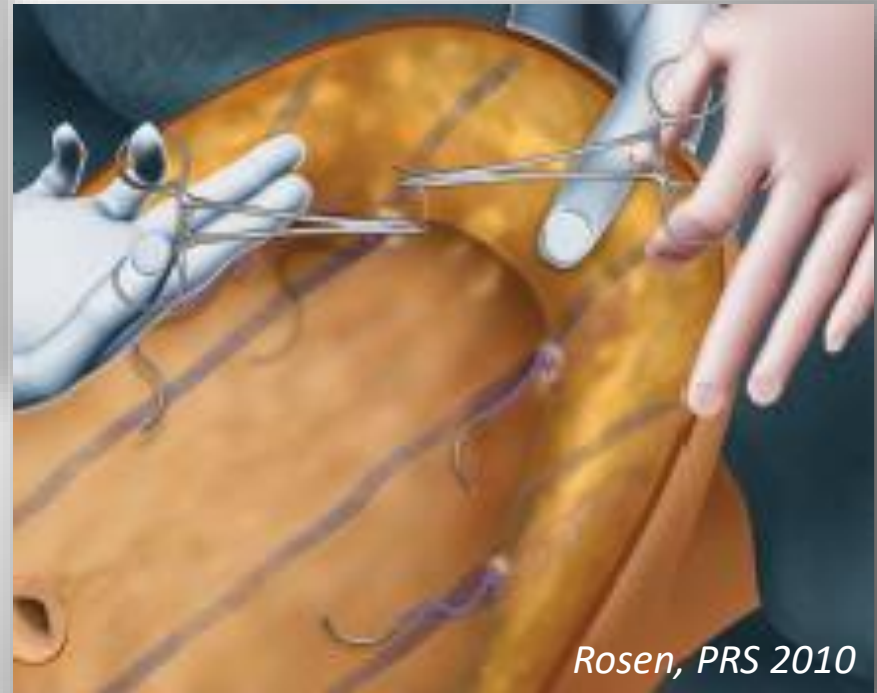
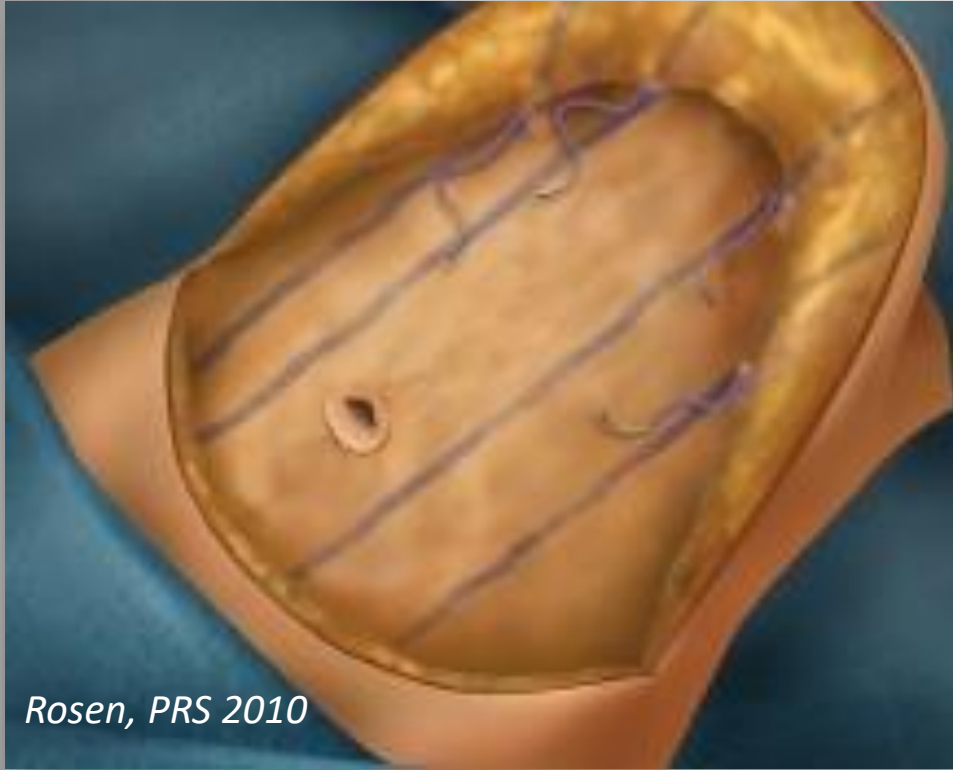
Finish lower abdominal PTS  
Address the umbilical transposition



# Barbed Progressive Tension Sutures



# Unidirectional Barbed Suture





# No Drain Body Contouring Patient

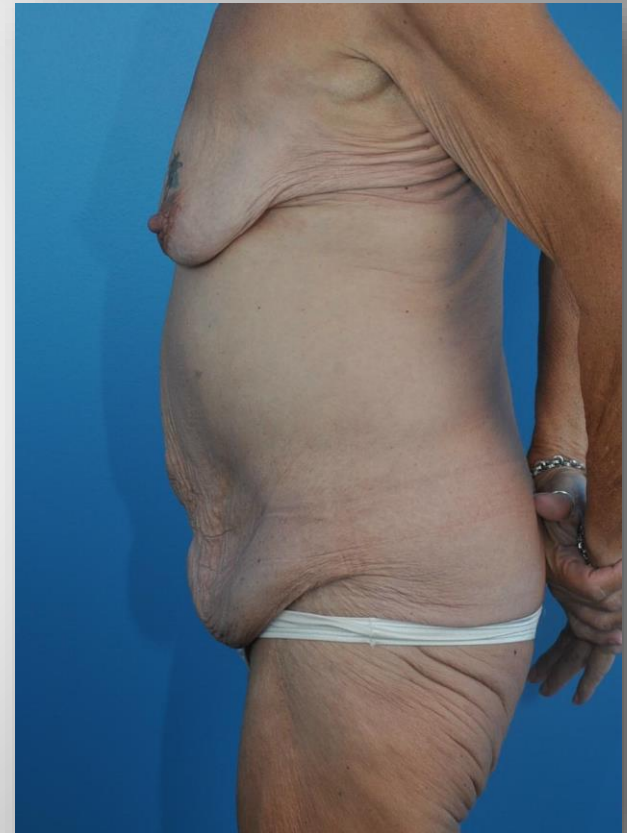


Arm lift

Mastopexy  
with lateral auto-  
augmentation

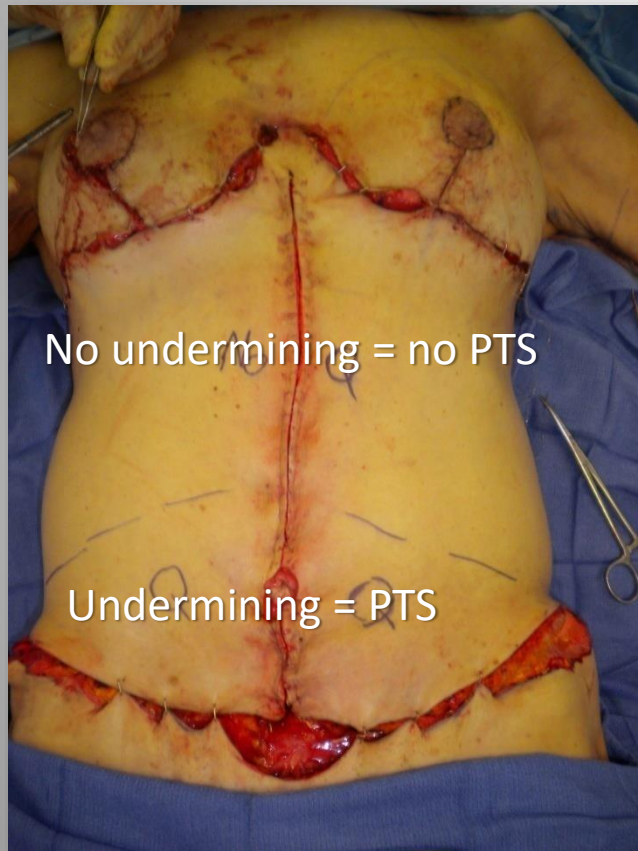
Body lift

Thigh lift





# No Drain Body Contouring Patient



# No Drain Body Contouring Patient

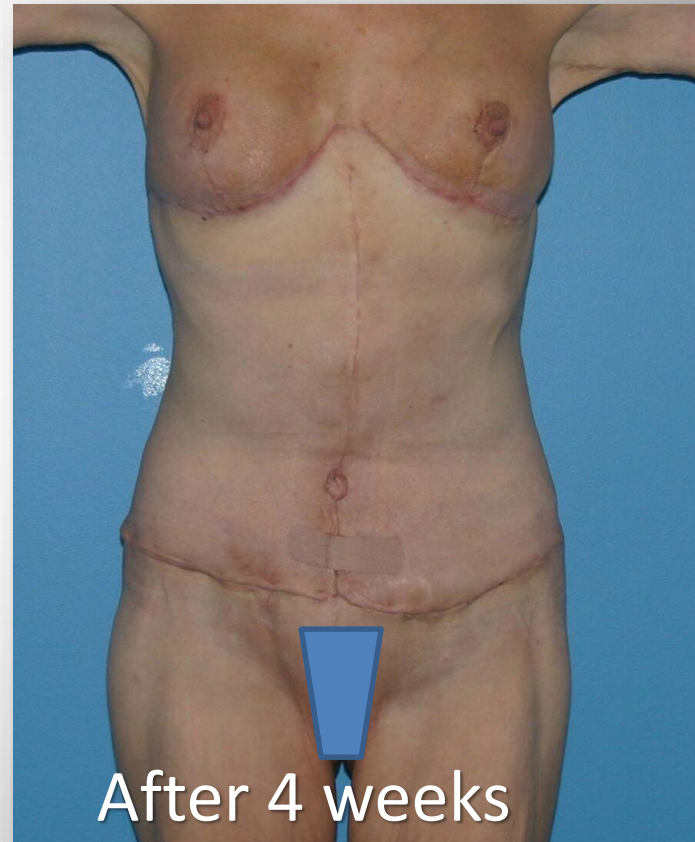




# No Drain Body Contouring Patient



# No Drain Body Contouring Patient



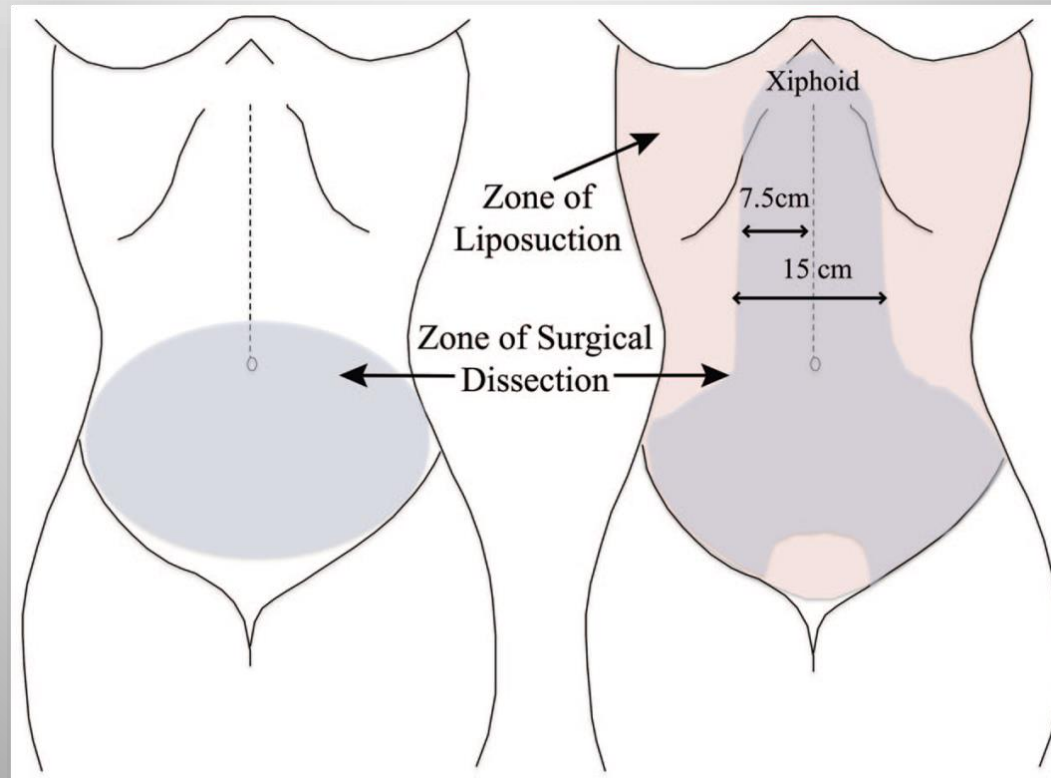
# No Drain Body Contouring Patient



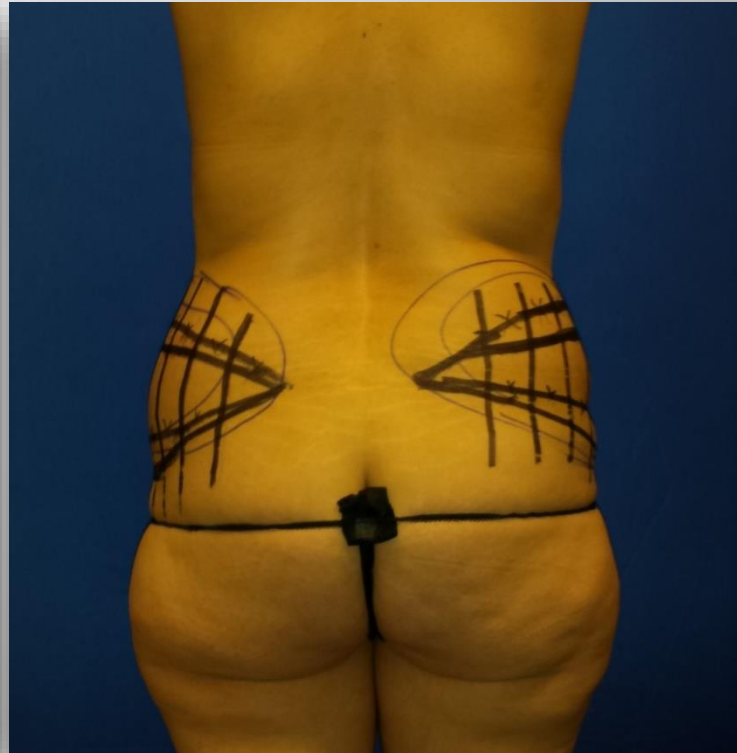
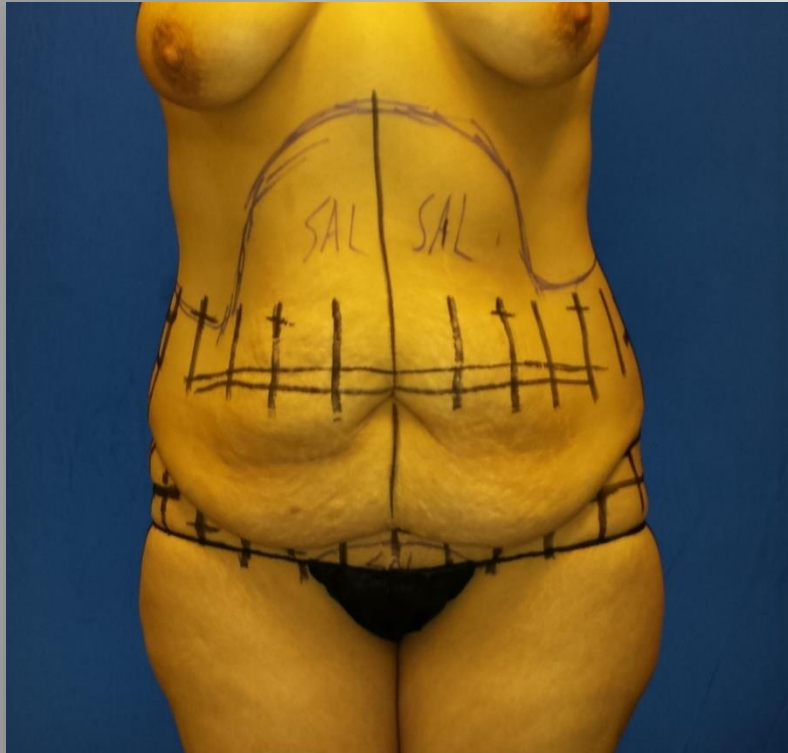


# Lipo-Abdominoplasty

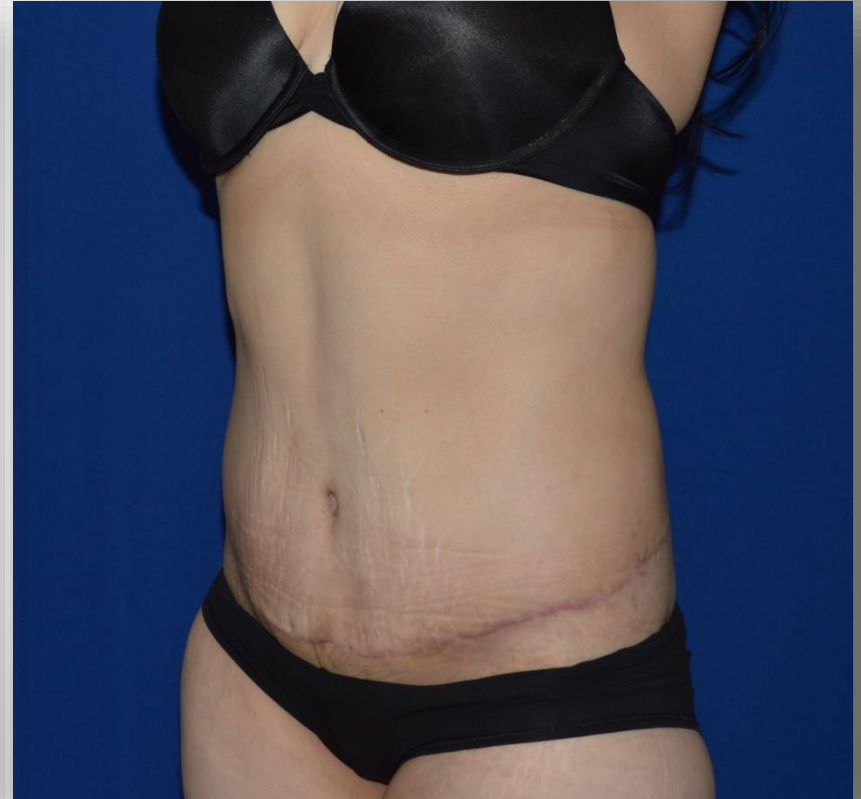
Lipo-abdominoplasty with minimal lateral undermining is safe



# Liposuction of Abdominoplasty Flap



# Extended Lipo-Abdominoplasty



# No Drains No Suture

## Body Contouring

### Lipoabdominoplasty Without Drains or Progressive Tension Sutures: An Analysis of 100 Consecutive Patients

Sarah Epstein; Michael A. Epstein, MD, FACS;  
and Karol A. Gutowski, MD, FACS

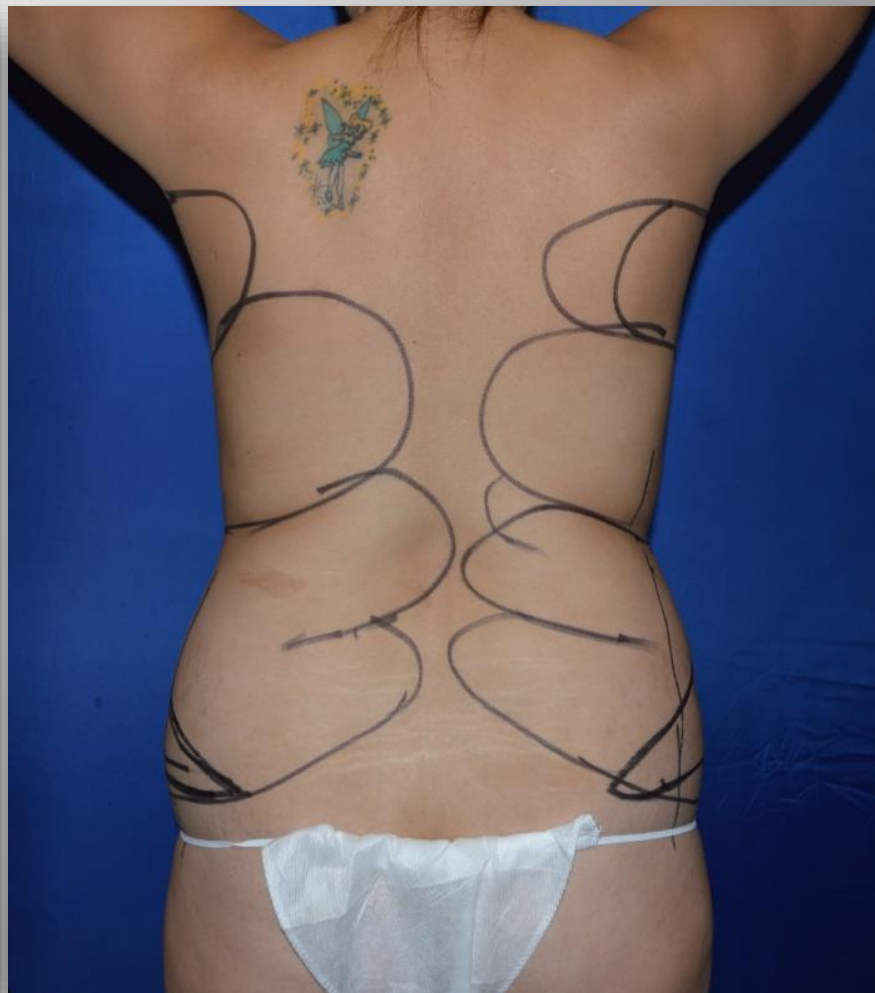


# No Drains No Suture

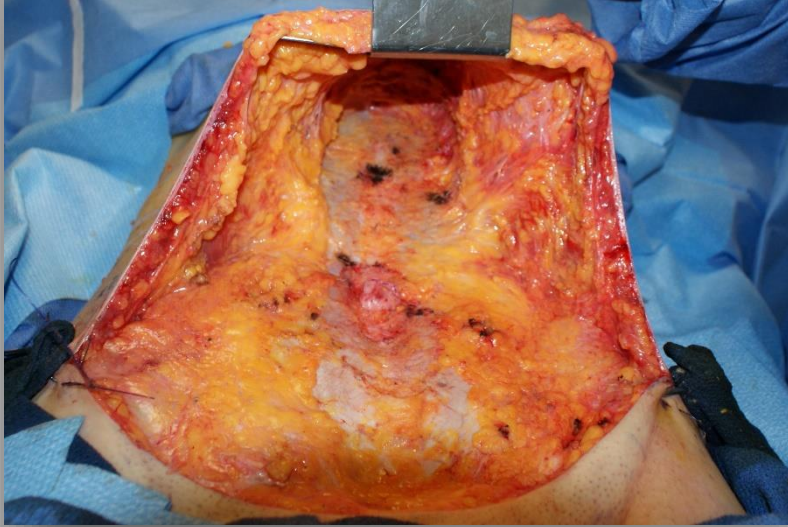




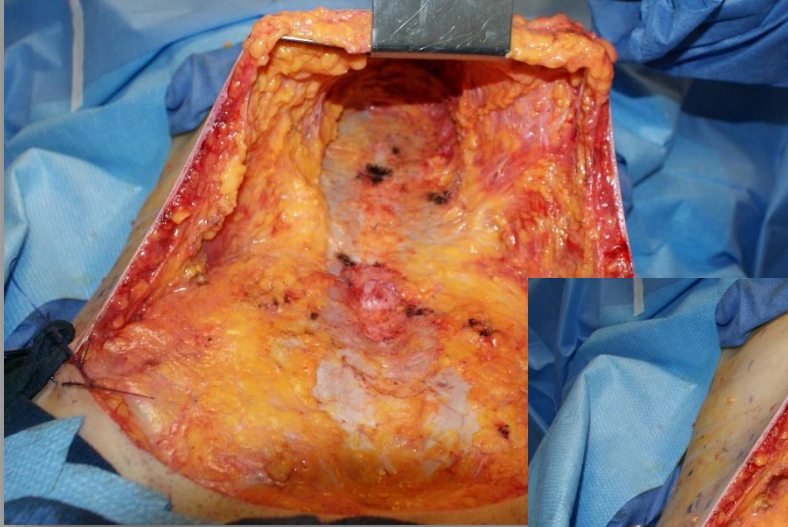
# Treat Entire Trunk



# No Drain Lipo-Abdominoplasty

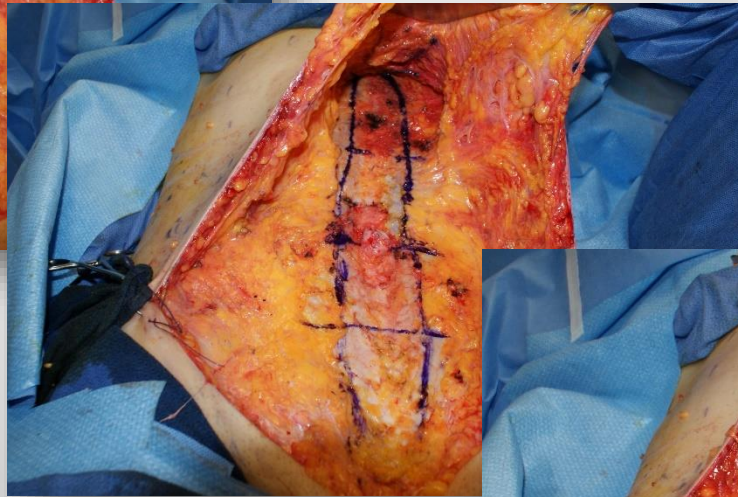
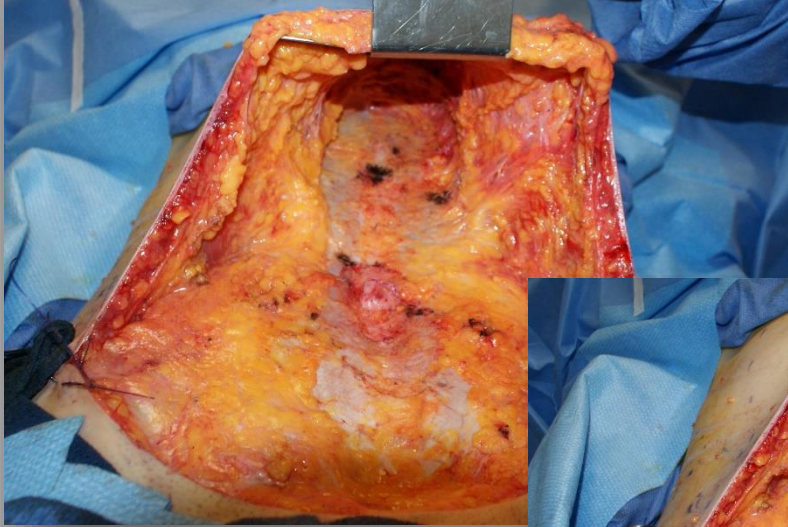


# No Drain Lipo-Abdominoplasty

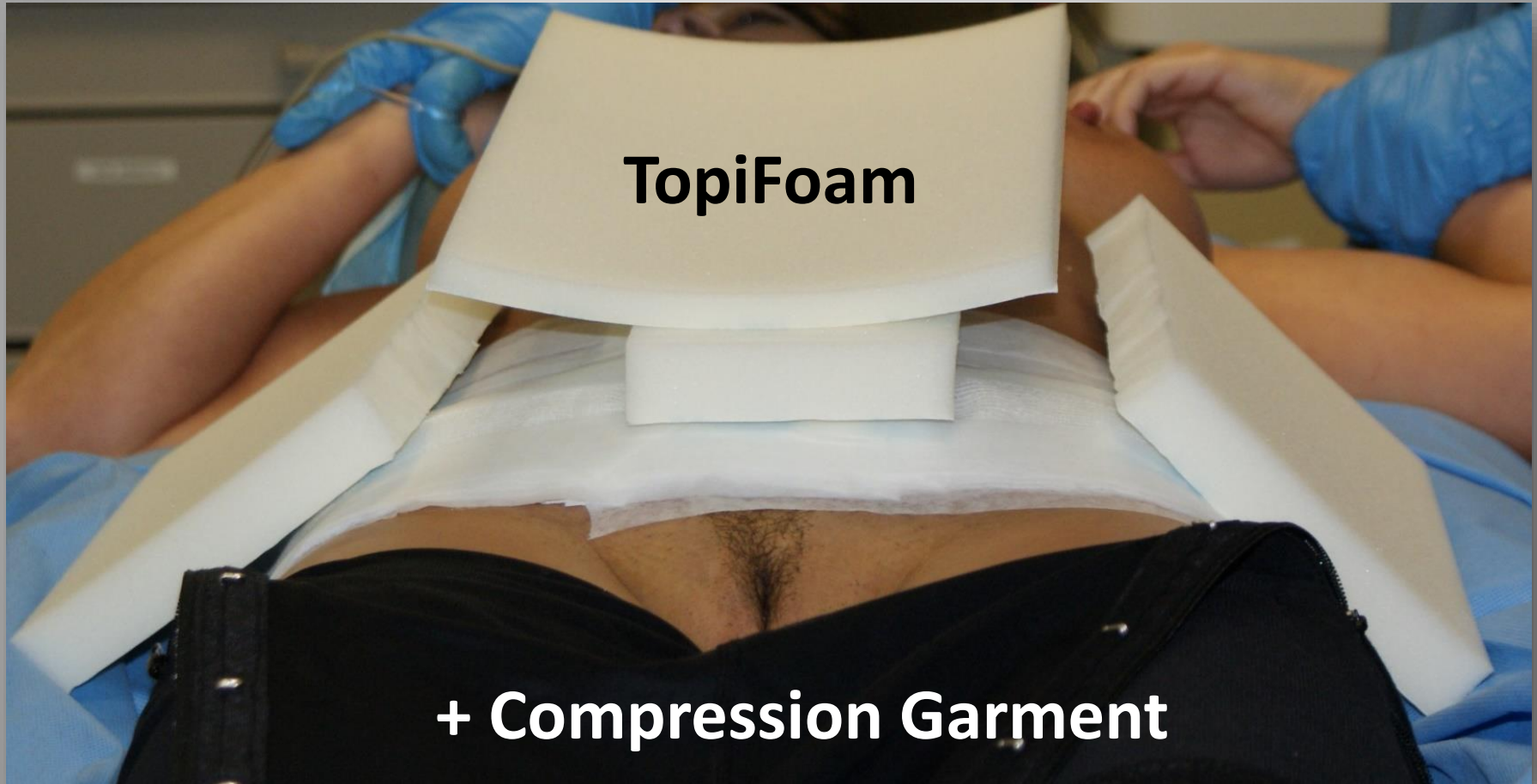




# No Drain Lipo-Abdominoplasty



# Compression



**+ Compression Garment**

**+/- Soft Abdominal Binder**



# No Drain Abdominoplasty



# No Drain Abdominoplasty



# No Drain Abdominoplasty



# Practical Tips

- Instruct assistants on principals of this technology
  - More familiarity = faster incorporation it into your practice
  - Don't cut off one of the two needles of the bidirectional sutures
- Suture is more firm
  - Gentle stretching prevents loop and knot formation
- Avoid contact with gauze, lap sponges & similar materials
  - Barbs may attract lint-like material onto the suture
- Two needles on operative field with each suture
  - Protect the needle not in use with a needle holder
- If a barbed suture breaks
  - Start a new suture with 3-4 cm of overlap with the old suture



# More Practical Tips

- Keep abdominal flap aligned
  - Mark undersurface & avoid tendency to pull flap to one side
- Avoid excess tension as fat necrosis may result
- May apply techniques to circumferential abdominoplasty
  - Use posterior “3-point” tissue fixation to close dead space
- Advise patients
  - Small abdominal contour irregularities resolve in 1 to 2 weeks
  - May feel “popping” sensation in 2 to 6 weeks



# Lessons Learned

- Quill PDO in dermis will “spit”
- Resist temptation to advance suture too far
  - Fascia – tissue contour
  - Dermis – puckers
- Teach nurses & scrub techs
- Don’t place on certain material
- Patient expectations
- Favorable learning curve
- Try it on a TRAM

# Technique Advantages

- Fast closure
  - 8 to 10 minutes additional time for PTS
- Can do without an assistant
- Maintains tissue approximation
  - Less tissue pull-through
- Eliminate abdominal drains
- Need for abdominal binder?

# Seroma Treatment

- Aspirate if in doubt
- SeromaCath
- Sclerosis
  - Doxycycline
  - Ethanol
- Excision



# No Drain 360° Lipo Abdominoplasty





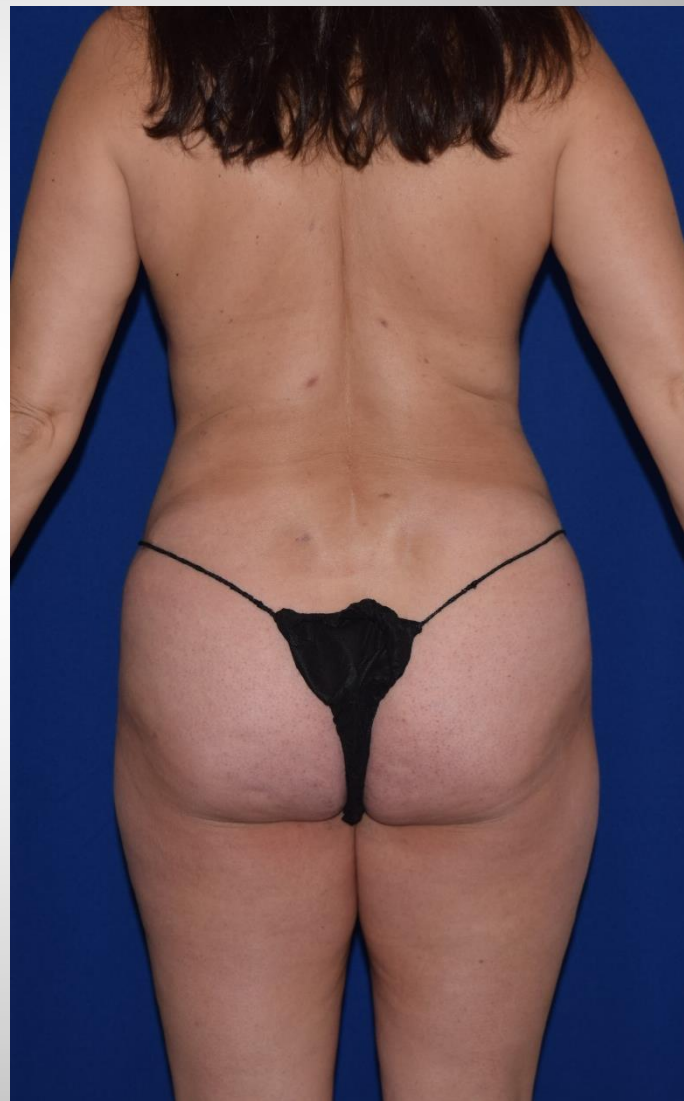
# No Drain 360° Lipo Abdominoplasty



# No Drain 360° Lipo Abdominoplasty

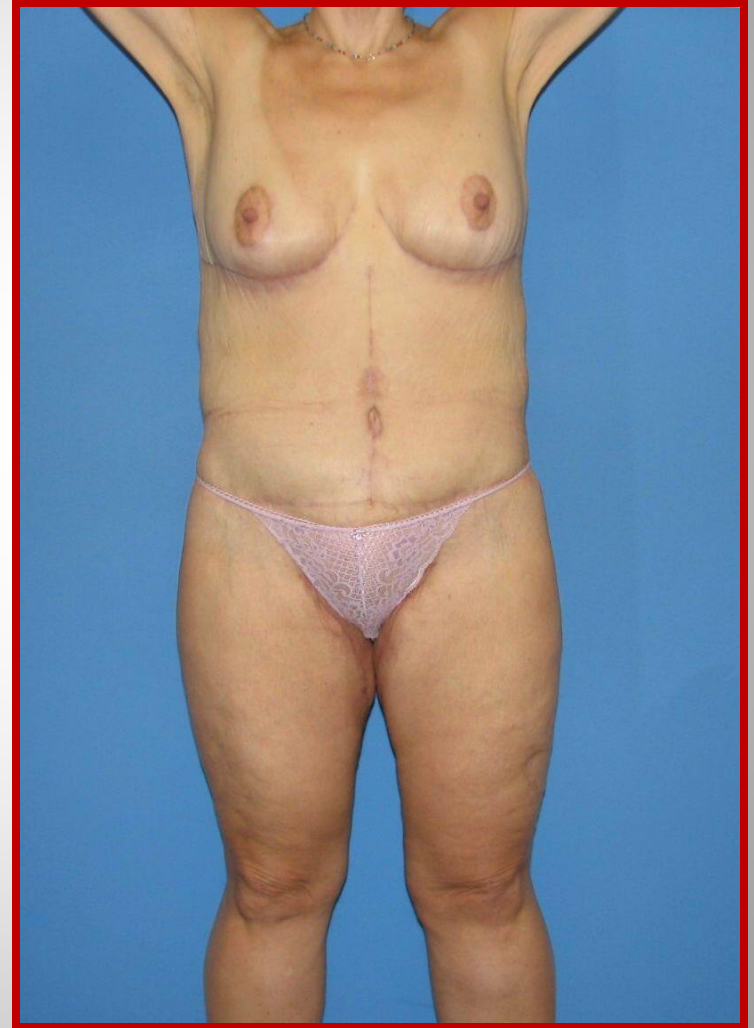
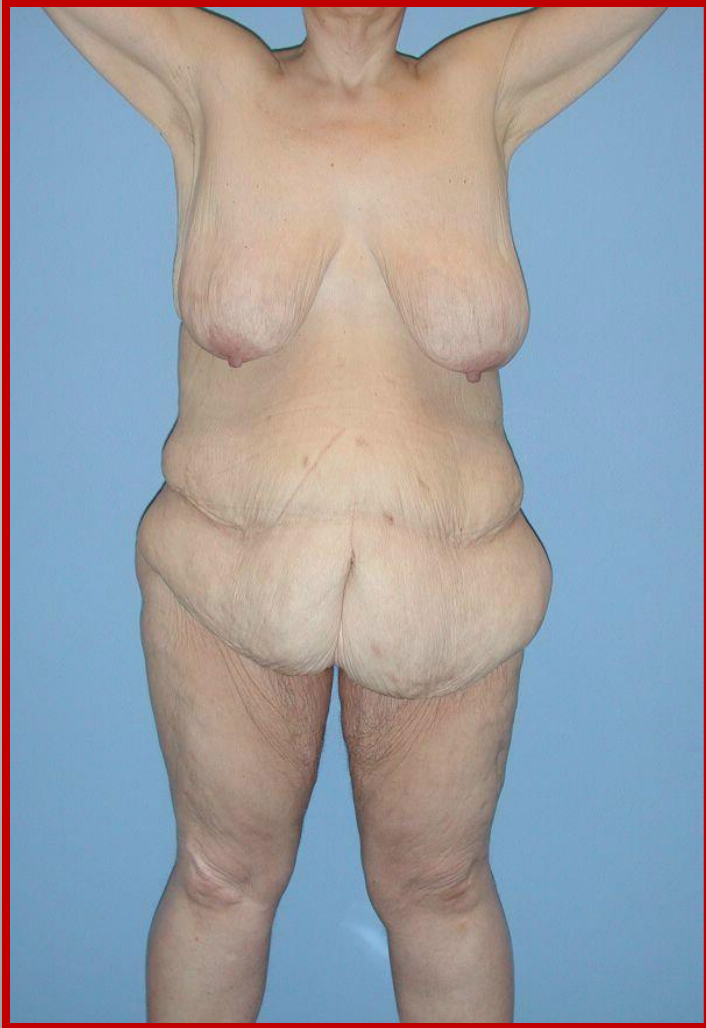


# No Drain 360° Lipo Abdominoplasty





# Not Using Drains is an Uplifting Experience!





# Contact Information

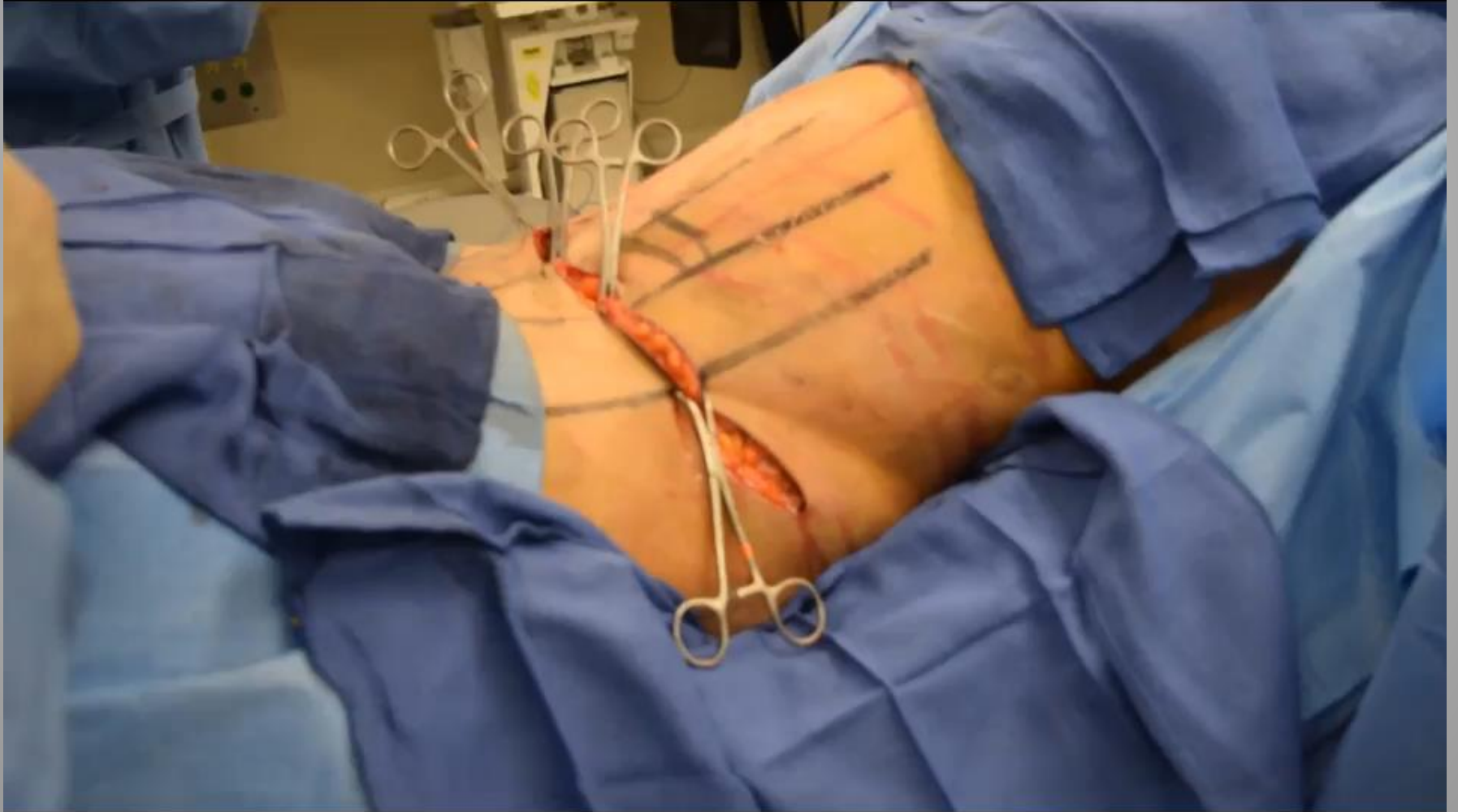
Karol@DrGutowski.com

773-870-0732

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# Video Presentation



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