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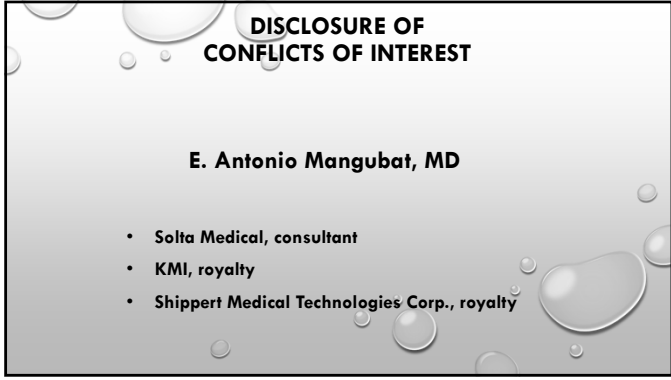
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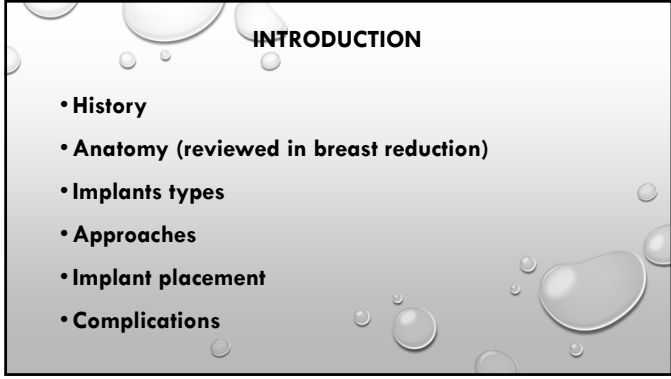
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**HISTORY**

- **Silicone gel**
  - Early 1960s Cronin and Gerow (Dacron Patch)
  - Silicone bleeding or sweating
  - Dow Corning developed Silastic II to ↓ leak 90%
  - ↓ contracture rates
  - Possible human adjuvant disease
- **Saline inflatable**
  - 1965
  - High leakage rate due to
    - Faulty valve system
    - Crease fold failure

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**HISTORY**

- **Double lumen gel/saline**
  - Saline outer shell
  - Gel inner shell
  - Volume adjustable
  - Semipermeable outer shell
    - Lower contracture rate than single lumen gels
    - Barrier to gel leakage
    - Antibiotics
    - Steroids
    - Betadine
  - Saline shell high leak rate

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**HISTORY**

- **Becker Implant**
  - Gel outer shell
  - Saline inner shell
- **Polyurethane covered gel**
  - Foam cover implants ↓ contracture rates ~ 3%
  - Introduced in 1970
  - Texturing was the key
  - Transient erythema, rash, swelling
- **FDA ban silicone implants is 1992**
  - Enter the saline era
  - Only 2 of the 12 US breast implant manufacturers survived

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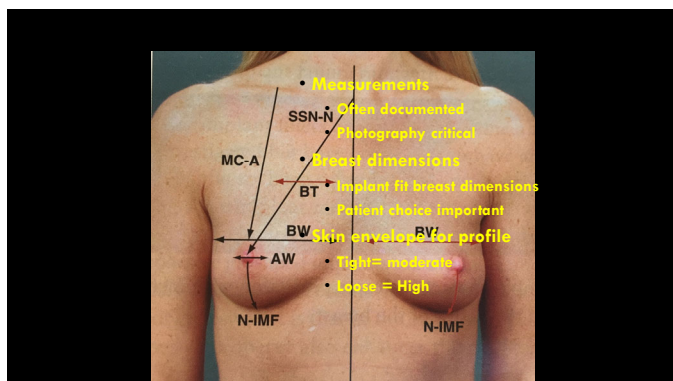
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SALINE VS. SILICONE		
Physical Trait	Saline	Silicone
Appearance	Same	Same
Detectability to touch	More palpable	Less noticeable
Wrinkles/ ripples	Possible	Rare
Palpable "knuckle"	Possible	Rare
Spontaneous deflation	6% in 3 years	Does not occur
Silent rupture	Does not occur	Typical, semi-solid
Incision	Short	Slightly longer
Cost	Less	More costly
Monitoring recommended	None	MRI q3yr
Frequency of use	Less	More

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SALINE IMPLANTS	
• Textured surface	<ul style="list-style-type: none"> <li>• Brought over from polyurethane gel technology</li> <li>• Thought to ↓ contracture</li> <li>• Rippling more prominent</li> <li>• Submuscular position preferred</li> <li>• Little or no implant movement postop</li> <li>• Anatomic shape available</li> </ul>
• Smooth surface	<ul style="list-style-type: none"> <li>• Behave different than gels</li> <li>• Lower contracture rate</li> <li>• Capsule less bioactive than textured</li> </ul>

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**BREAST AUGMENTATION**  
*RIPPLING EXPERIENCE*

- Not much published
- Low body fat
- Subglandular placement + ptosis
- Most prominent w/ textured prostheses
- Treatment
  - Smooth saline implants or
  - Silicone implants

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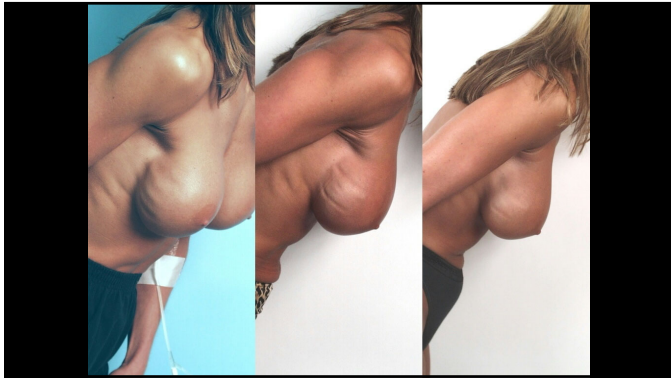
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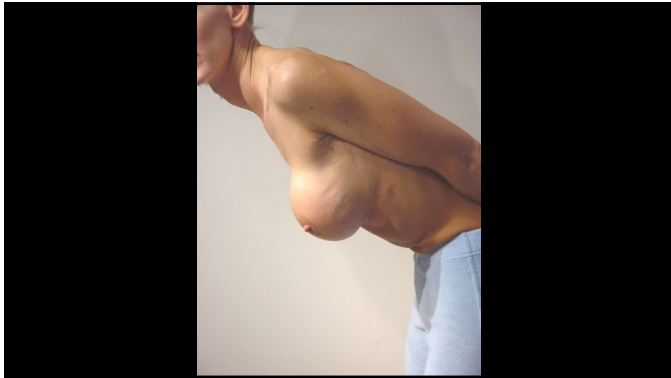
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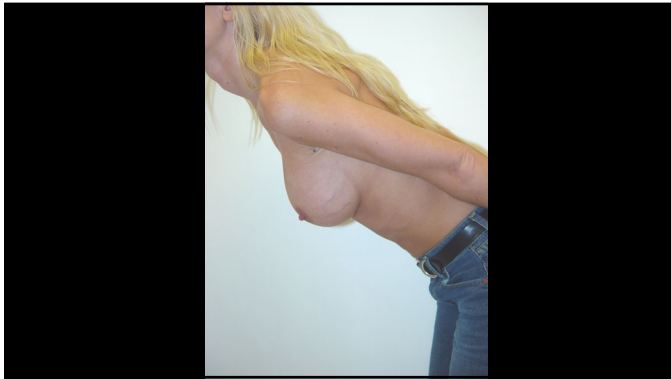
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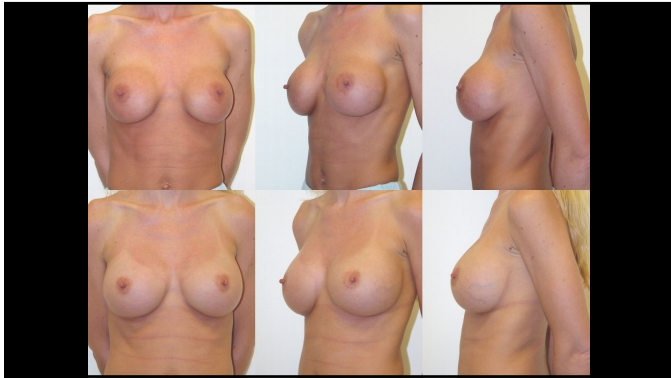
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**SILICONE IMPLANTS**

- Silicone with Baker I capsule is superior to best saline results BUT.....
- Will the new implants bring the same problems of the past?

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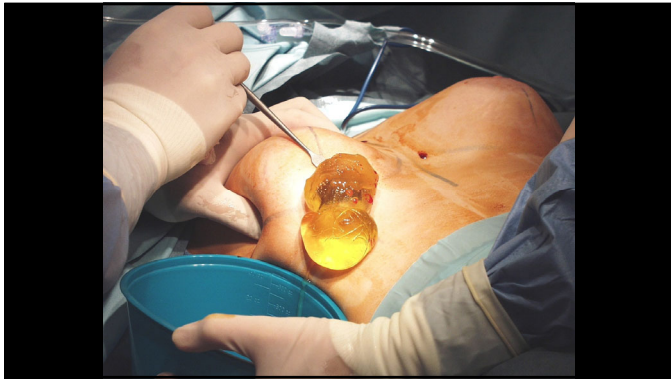
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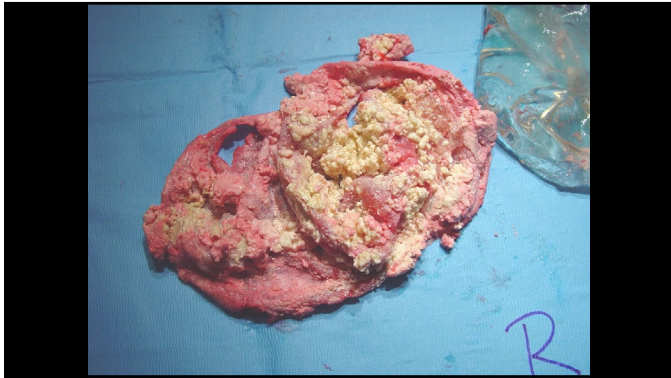
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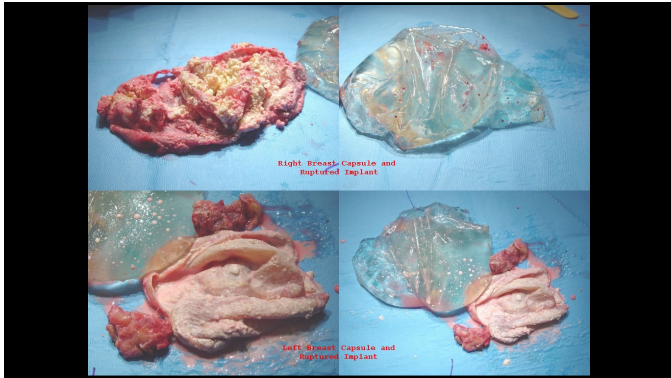
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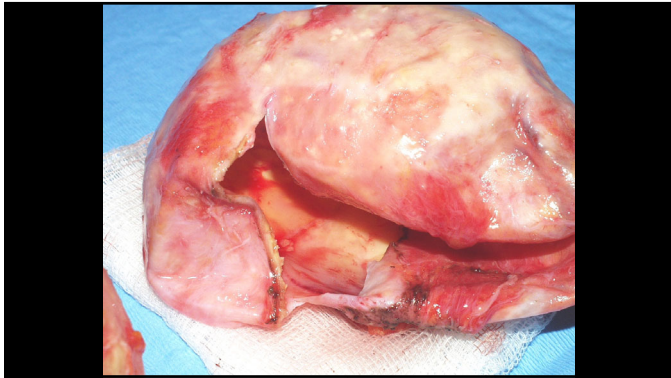
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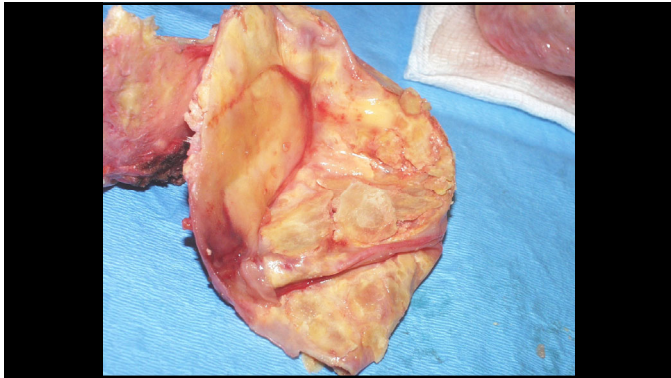
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**SALINE VS. SILICONE IMPLANTS  
LONGTERM COMPLICATIONS**

- **Saline:**
  - Deflation is a simple fix
  - Current contracture rates ~9%
  - Calcifications rare
- **Silicone:**
  - Current contracture rates ~9%
  - Granulomatous reactions common often severe
  - Heavy calcifications
  - Messy revisions

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**REVIEW OF RECENT LITERATURE:  
SILICONE IMPLANT HEALTH SAFETY**

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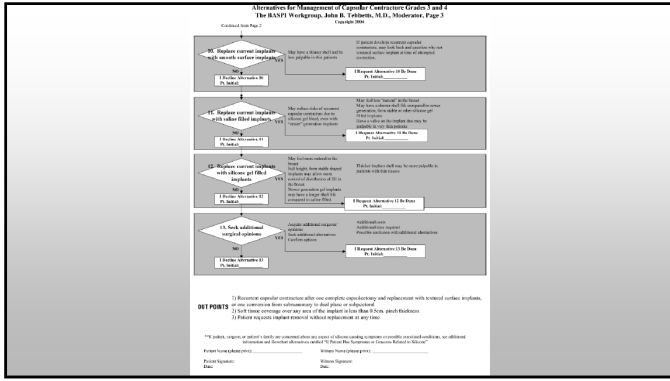
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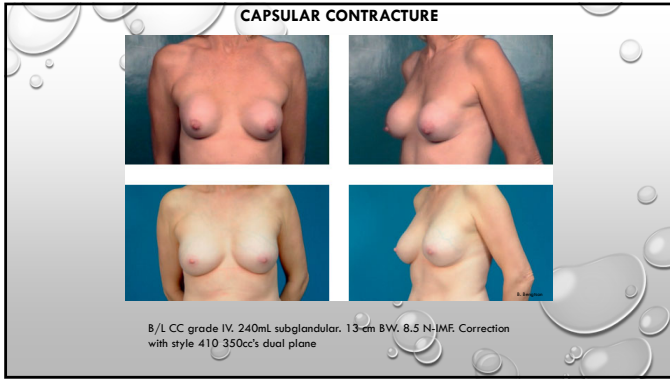
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**SEROMA**

- 1-2%
- Swollen breast
- Trans illuminates
- Tx
  - Initial Abx or steroids x 2 tries
- Not resolved
  - Blunt Cannula drainage/ abx irrigation, steroid instillation
  - Explant, irrigate, re-implant in 3 months
- Late Seroma, consider Anaplastic Large Cell Lymphoma (ALCL)
  - Very rare, 60 cases reported 1997-2010 world wide
  - Risk > SEER Data alone:
  - Surveillance, Epidemiology, and End Results (SEER), NCI

ALCL cells are found within seroma fluid or the fibrous capsule<sup>14, 15</sup>

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**COMPLICATIONS**

- Ptosis- BA public enemy #1
- Double bubble deformity
- Options
  - Subglandular placement
  - Mastopexy

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**BREAST PTOSIS CLASSIFICATION (REGNAULT)**

Normal	= Nipple above IMF + lower pole at IMF
Pseudoptosis	= Nipple above IMF + lower pole below IMF
Grade I	= Nipple at IMF
Grade II	= Nipple below IMF but above lower pole
Grade III	= Nipple below IMF but below lower pole

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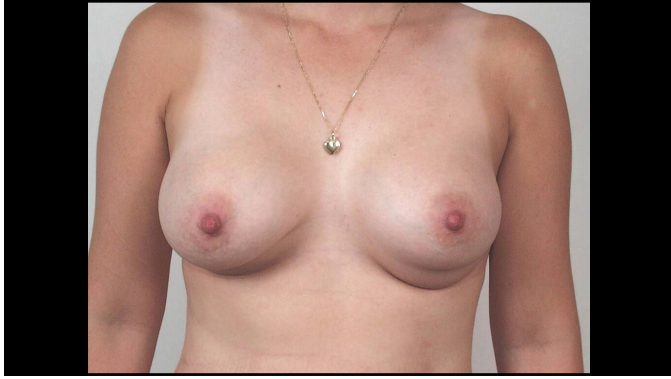
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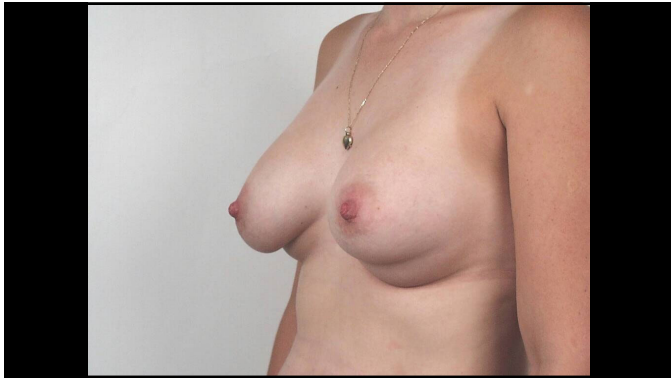
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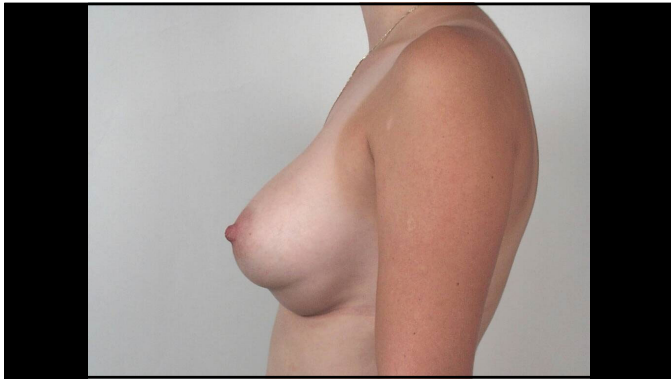
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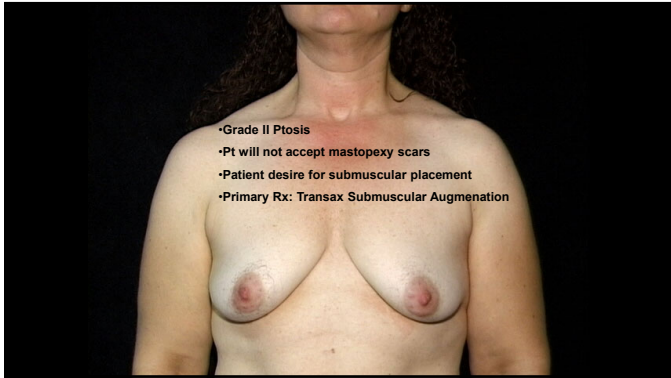
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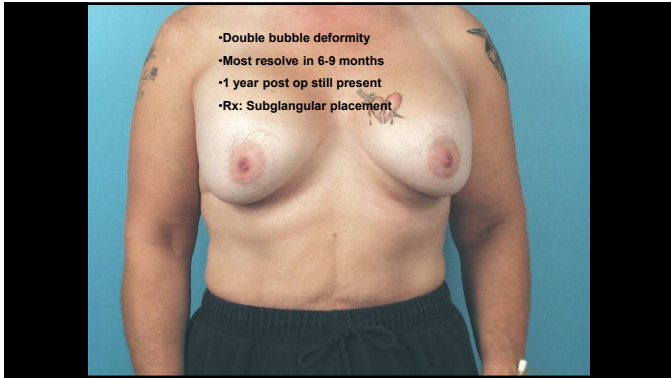
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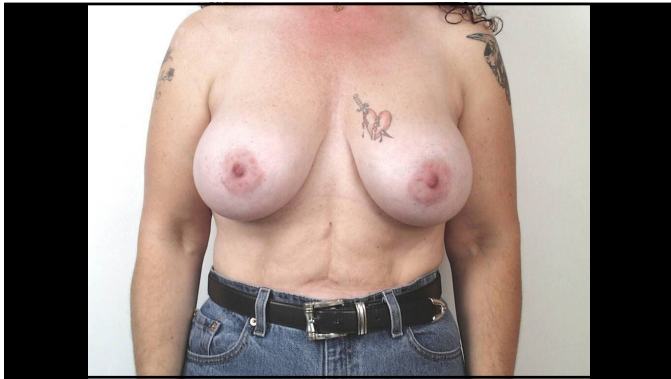
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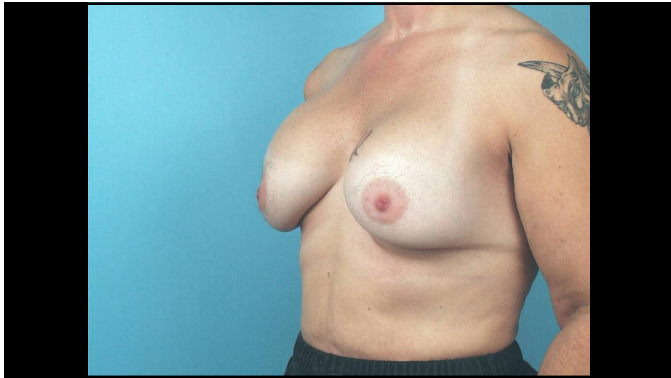
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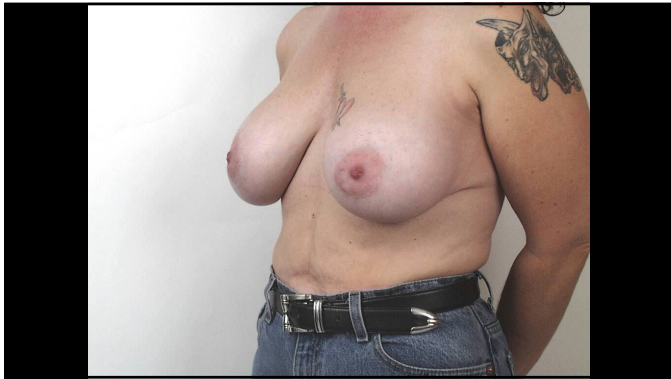
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Seven horizontal lines for handwritten notes.



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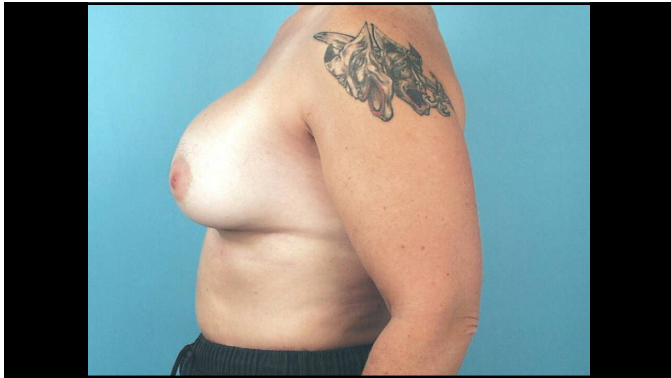
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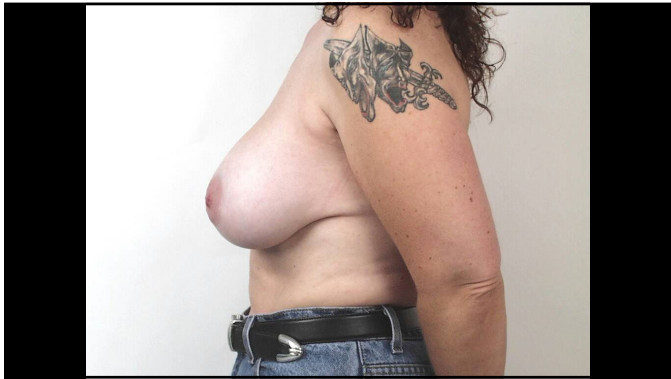
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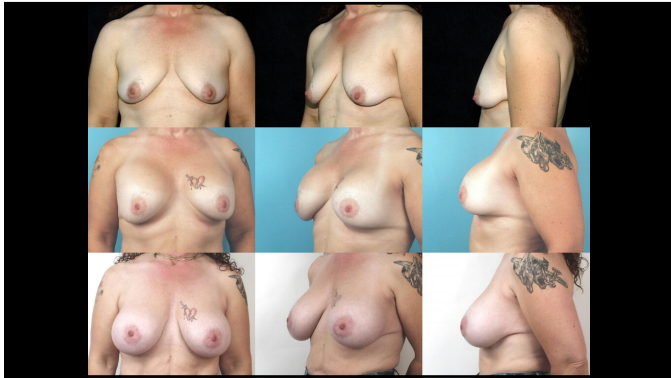
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Horizontal lines for notes.



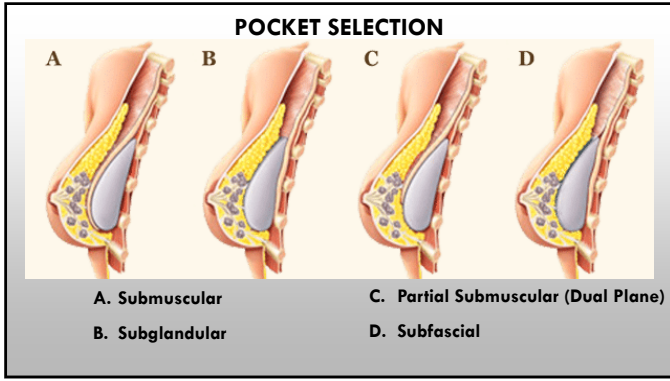
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Horizontal lines for notes.



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Horizontal lines for notes.



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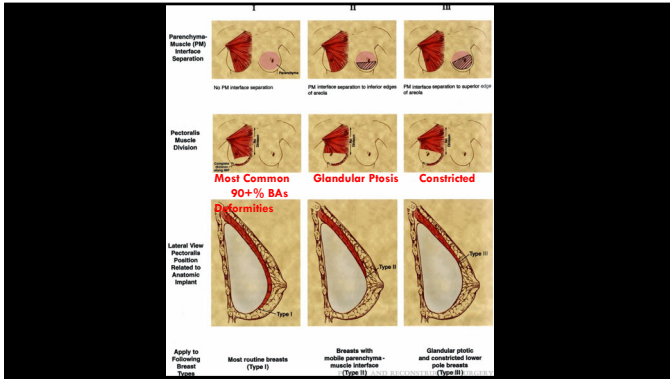
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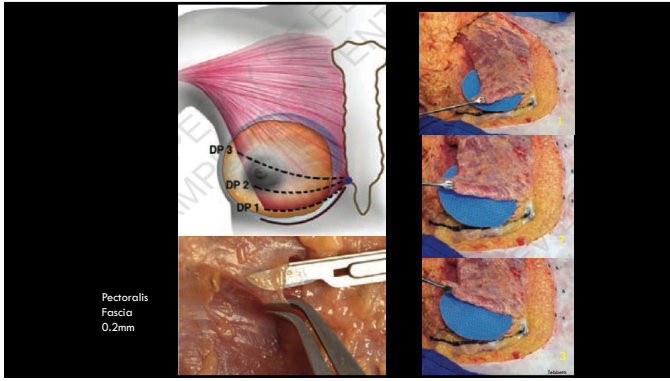
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### MALPOSITION

- Inferior Pole Malposition
- Fold Malposition
- Lateral Malposition
- Synmastia/ Symmastia
- Double bubble deformity

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### INFERIOR POLE MALPOSITION

“Bottoming out” Lower Pole Stretch  
 Not to be confused with IMF malposition  
 Increased NiIMF distance + appropriate fold position  
 Can exist with implant malposition

**Causes**

- Large implants
- Release IMF/poor pocket dissection
- Tight skin envelope
- Gravity



Implant width (cm)	New nipple to inframammary fold distance (cm)
11.0	7.5 ± 0.5
11.5	8.0 ± 0.5
12.0	8.5 ± 0.5
12.5	9.0 ± 0.5
13.0	9.5 ± 0.5

**Avoidance**

- Some bottoming out expected
- Nipple drops 2 cm on average
- Appropriate fitting implant selection
- Silicone vs. Saline

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### SYNMASTIA/IATROGENIC

- Overaggressive dissection
- Midline pectoral sternal attachments disrupted
- Most difficult challenge
- Manage expectations – critical
- Stress breast are sisters NOT twins
- May require combination of all surgical skills
  - Augmentation
  - Mastopexy
  - Expanders
  - Reconstruction

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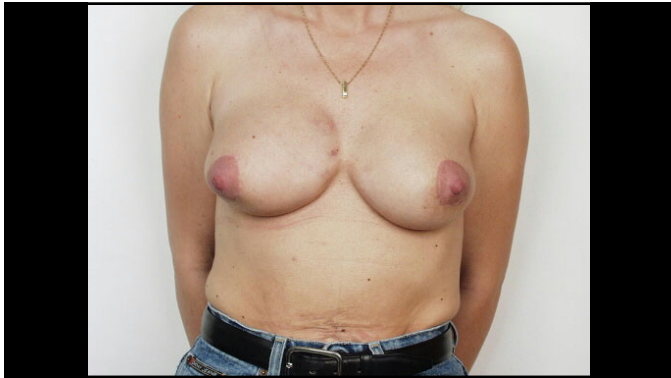
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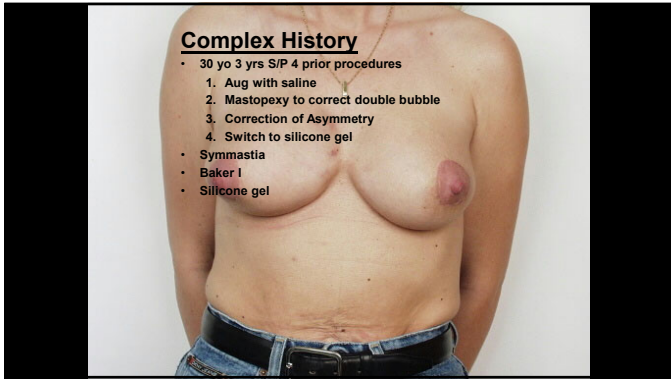
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**Complex History**

- 30 yo 3 yrs S/P 4 prior procedures
  1. Aug with saline
  2. Mastopexy to correct double bubble
  3. Correction of Asymmetry
  4. Switch to silicone gel
- Symmastia
- Baker I
- Silicone gel

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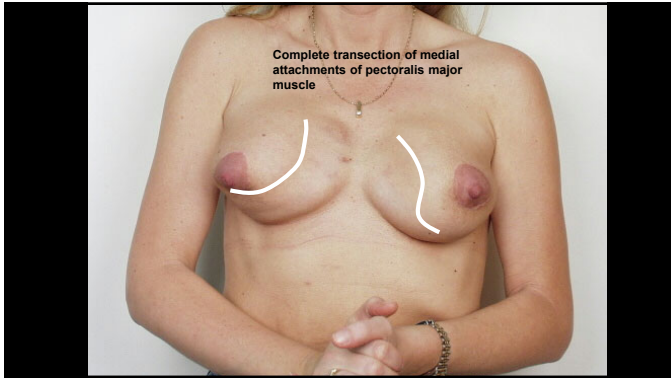
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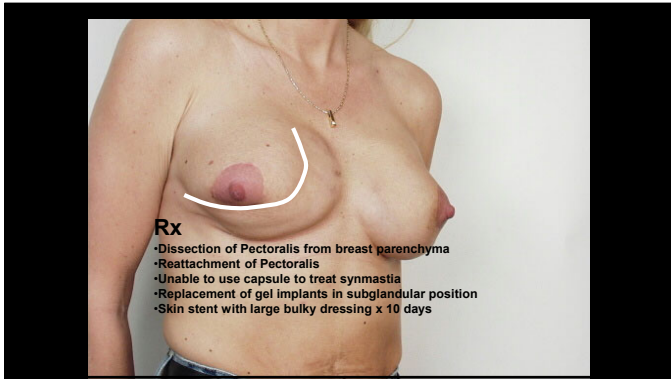
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**DOUBLE BUBBLE**

- 3 TYPES
- 1. Waterfall effect
- 2. Persistence of the old IMF
- 3. Scar tissue causing Pectoral-dermal insertion

- Implant/Breast Mismatch?
- Blunt Dissection

- Prevention
- Correct size implant BW
- Scoring IMF fibers



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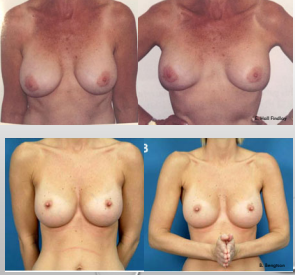
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**DANCING BREASTS**

- Expected Side effect. Not a complication
- Submuscular placement
- Thin, active patients
- Body Builders
- Avoidance
  - Dual Plane
  - Subglandular



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**TUBEROUS BREAST DEFORMITY**  
**DIAGNOSIS AND TREATMENT**

E. Antonio Mangubat, MD  
 Seattle, WA

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**DISCLOSURE OF  
CONFLICTS OF INTEREST**

**E. Antonio Mangubat, MD**

- Solta Medical
- KMI
- Shippert Medical Technologies Corp.

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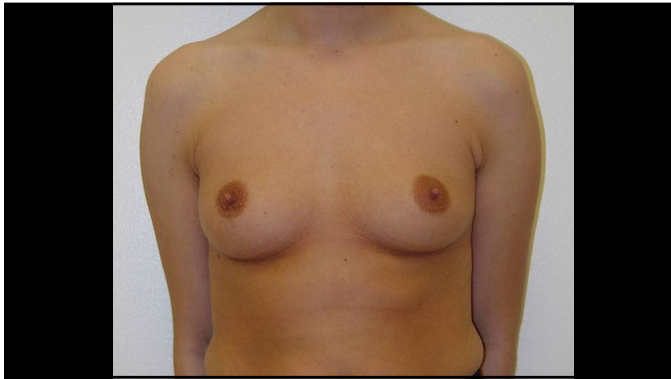
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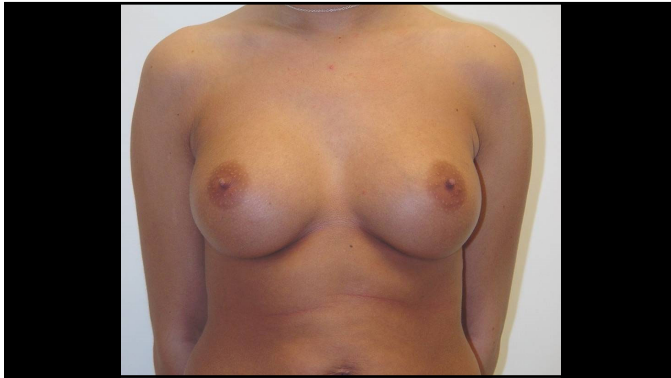
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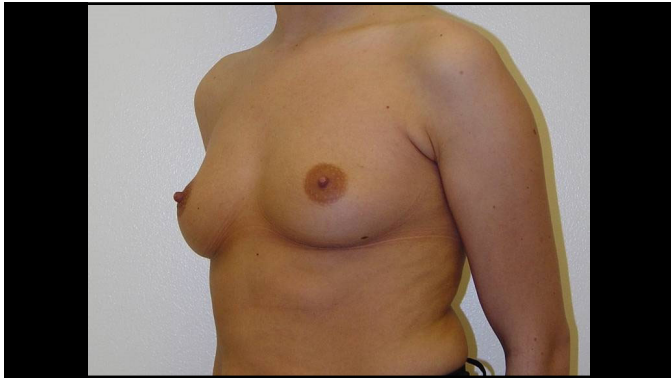
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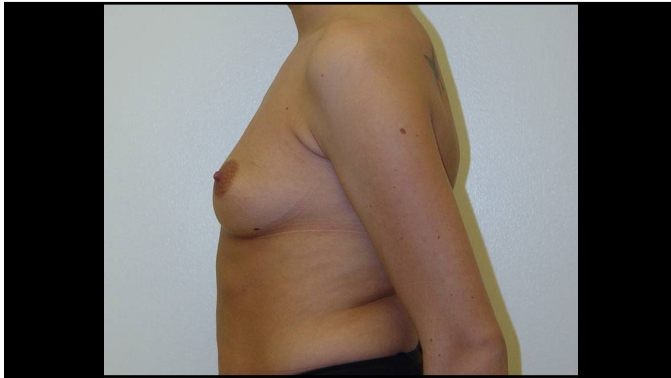
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Seven horizontal lines for handwritten notes.



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Seven horizontal lines for handwritten notes.



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Seven horizontal lines for handwritten notes.





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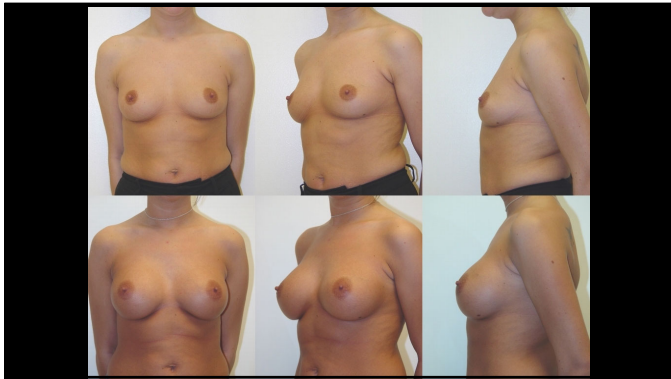
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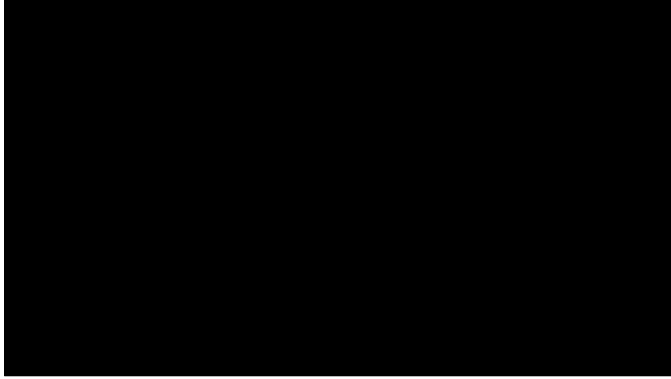
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**TUBEROUS BREAST  
HALLMARK FEATURES**

- Deficient skin envelope
- Short nipple-IMF distance
- Short vertical & horizontal base diameter creates tubular appearance.
- Excessively prominent NAC caused by herniation of breast tissue against a constricted base
- Usually hypoplastic breast
- Ptosis common with high IMF

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### TUBEROUS BREAST HALLMARK FEATURES

- **Symmetry difficult to achieve**
  - Breast parenchymal volume difference
  - Significantly different nipple IMF distances
- **Contralateral breast often requires**
  - Mastopexy
  - Reduction

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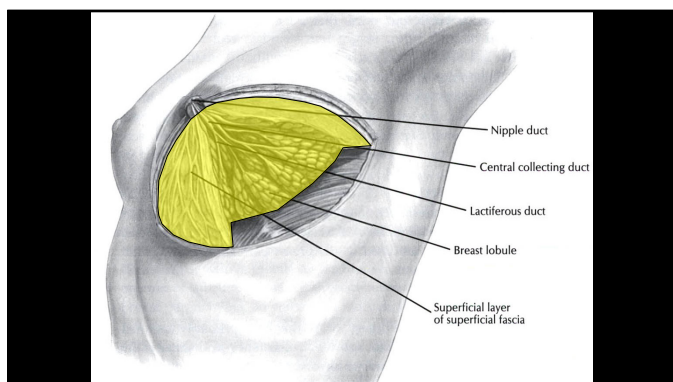
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### TUBEROUS DEFORMITY CLASSIFICATION

<u>Classification</u>	<u>Features</u>
Type I	Lower medial quadrant deficient
Type II	Both lower quadrants deficient
Type III	All four quadrants deficient with constriction of breast base horizontally and vertically.

Grolleau, J. L., Lafrey, E., Lovigne, B., et al. Breast base anomalies: Treatment strategy for tuberous breasts, minor deformities, and asymmetry. PRS. 104: 2040, 1999

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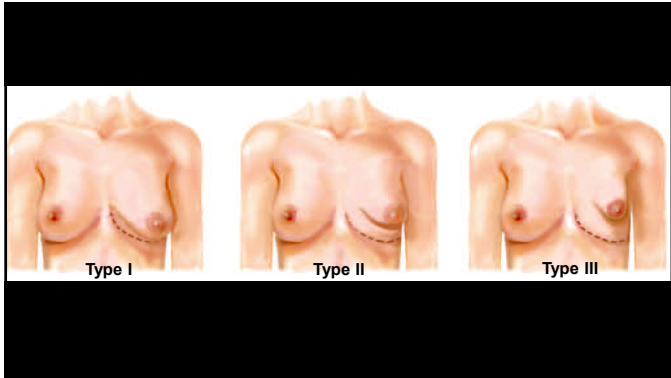
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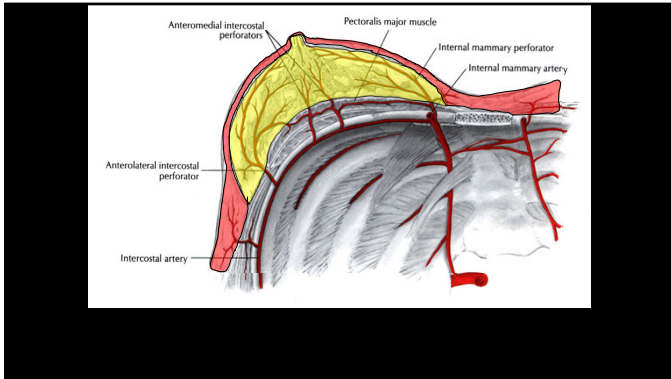
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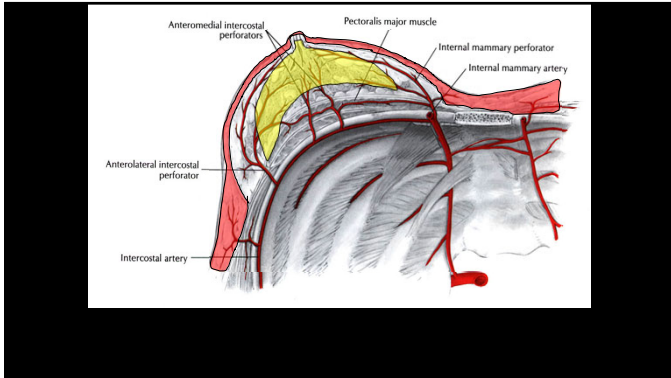
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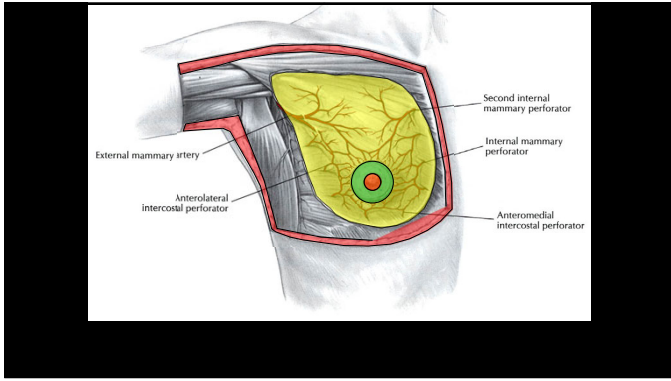
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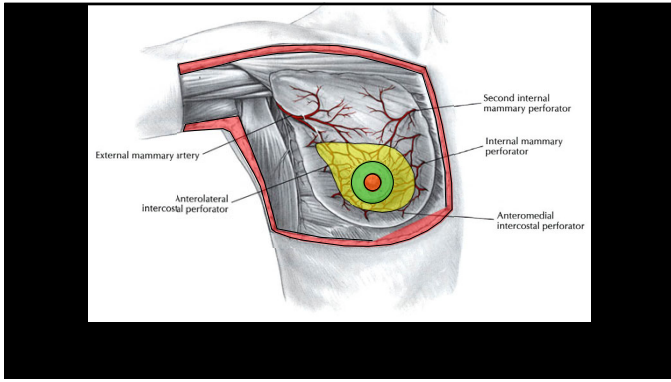
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**BREAST CONSTRICTION & ASYMMETRY**

- **Difficult challenge**
- **Manage expectations – critical**
- **Stress breast are sisters NOT twins**
- **Requires combination of surgical skill**
  - **Augmentation for size**
  - **Mastopexy for ptosis**
  - **Expanders often needed with deficient skin envelope**

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**TUBEROUS BREAST TREATMENT**

- Common universal maneuver=disrupt ring of tissue constriction
  - Incisions
  - Blunt spreading
- Transposing skin
  - lengthen NAC to IMF distance
  - Increase base width

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**CONSTRICTED PARENCHYMA TREATMENT**

1) Wide subglandular undermining

2) Bisect (sagittal) breast → splay out

Tubular Breast Shape

Conical Breast Shape (with or without an implant)

89

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**SKIN ENVELOPE TREATMENT**

Laterally based IFC cutaneous flap (Dinner, Dowden) APS, 1987

Tubular Breast Shape

Conical Breast Shape

90

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### MOST COMMON MANEUVER

- Transaxillary breast augmentation
- Placement of implants
- Inspect for constriction pliability
  - Soft and resolve over time
  - Stiff requiring release
- Release transaxillary with iconoclast instrument
- Breast parenchyma distributes more evenly
- If NAC is still too prominent -> donut mastopexy
- Progressively more aggressive to include expanders and mastopexy

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Type	Base	Inframammary Fold	Skin Envelope	Breast Volume	Poos	Areola
I	Minor constriction	Normal laterally, minor elevation medially	Sufficient	Minimal deficiency, no deficiency, or hypertrophy	Mild, moderate, or severe	Enlargement
II	Moderate constriction	Medial and lateral elevation	Inferior insufficiency	Moderate deficiency	None or mild	Normal, mild, or moderate herniation
III	Severe constriction	Elevation of entire fold, or fold absence	Global insufficiency	Severe deficiency	Mild/moderate	Severe herniation

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Place submuscular implant

Position implant

Perform subglandular dissection

Insert iconoclast piercing into gland

Spread the constricted breast

Parenchyma distributes over implant

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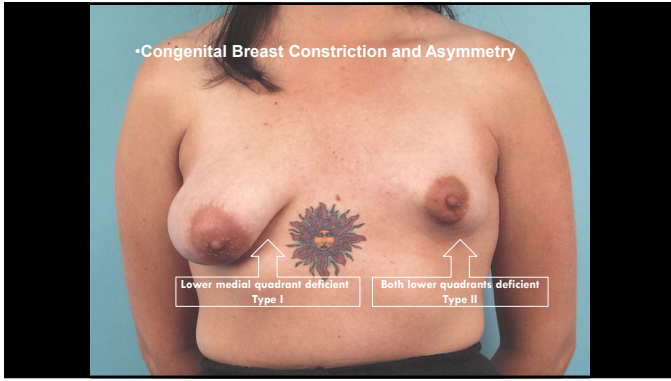
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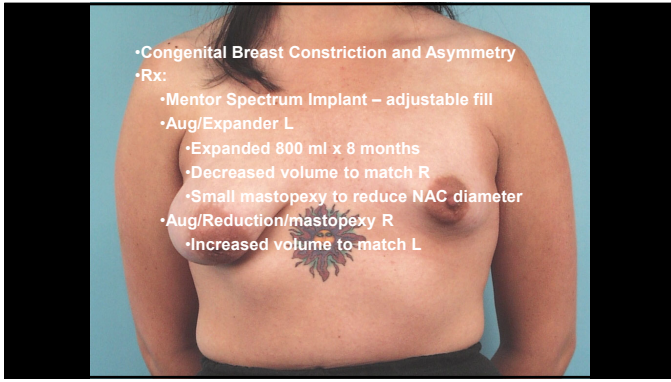
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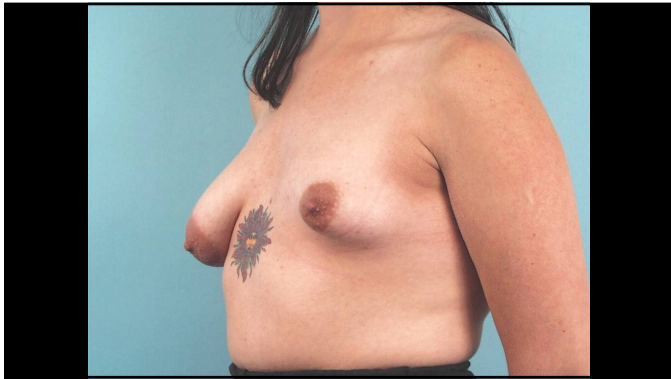
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97

Seven horizontal lines for handwritten notes.



98

Seven horizontal lines for handwritten notes.



99

Seven horizontal lines for handwritten notes.



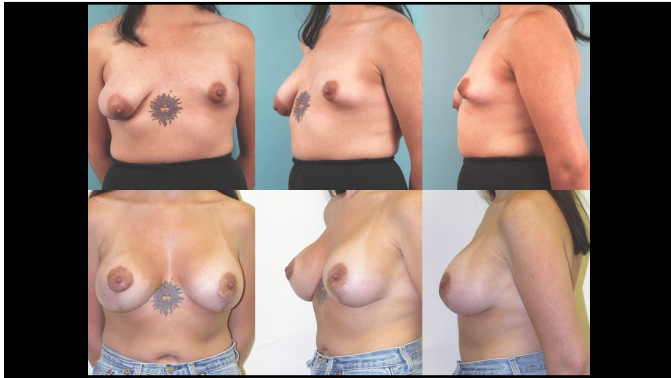
100

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101

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102

Seven horizontal lines for handwritten notes.

**TUBEROUS BREAST SUMMARY**

- Can be challenging
  - Asymmetry
  - Inadequate skin envelope
- Redistributing breast parenchyma common
- Redistributing skin uncommon in my practice
- Beware of vascular compromise with augmentation mammoplasty
  - Undermining parenchyma cuts central supply
  - Must rely on medial and lateral perforators
- Results typically satisfying for patient & surgeon

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**BREAST AUGMENTATION**

**THANK YOU!**

E. Antonio Mangubat, MD  
Seattle, WA

Acknowledge Robert Dragotti, DO

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**REFERENCE CHARTS INCLUDED**

**FOLLOWING LECTURE FOR STUDY**

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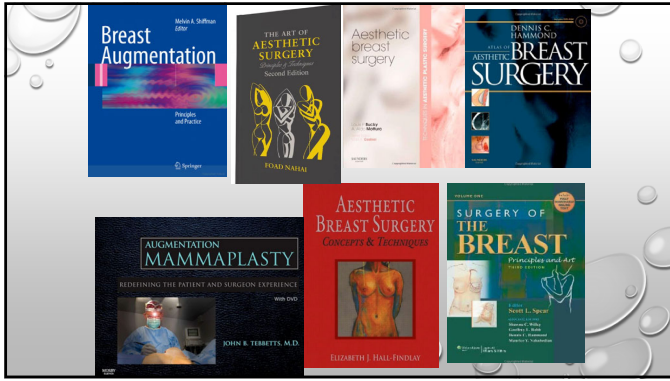
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