Breast Augmentation with Silicone Gel Prosthesis: Smooth or Textured Envelopes?

Jaime Anger, MD
São Paulo - Brasil
No breast implant

“Artificial” breast
Envelope

- Textured
- Smooth
Why?


- By altering the surface structure of the envelope it is possible to alter fibroplasia and collagen allignment.
The textured envelopes present different types of irregularities or rugosity. Depends on the manufacturer the surface may present **depressions, nodules, protrusions** and may be porous.
## MENTOR – Textured Implant

<table>
<thead>
<tr>
<th>Component</th>
<th>Raw Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shell, inner layer</td>
<td>Dimethyl Silicone Elastomer Dispersion</td>
</tr>
<tr>
<td>3. Shell, outer layer</td>
<td></td>
</tr>
<tr>
<td>2. Shell, barrier layer</td>
<td>Diphenyl Silicone Elastomer Dispersion</td>
</tr>
<tr>
<td>4. Shell textured layer</td>
<td>MED 4750 Silicone Elastomer</td>
</tr>
<tr>
<td>Patch assembly</td>
<td>MED 4750 Silicone Elastomer</td>
</tr>
<tr>
<td>Gel</td>
<td>Silicone Gel: Base and Crosslinker; platinum cure</td>
</tr>
</tbody>
</table>
Texture

- Micro-texture
- Micro-structure (foam)
The silicone oil is cured and at the same time compressed to a foam mold. The oil is mixed with the salt, subsequently dissolves to form the outer irregular surfaces.
Texture

- **Micro-texture**
  - Mentor
  - Perthese
  - Nagor

- **Micro-structure**
  - Inamed
  - Polyurethane
    - Silimed
  - Eurosiline
  - Silimed
  - PIP
  - Sabbin
  - Rofil
  - Snow-Lanbem
Jaime Anger, MD

ADHERENCE

With Bleeding!
Smooth
Moarines giving rise to gradual elevations, some end in plateaus
Biocell® (Inamed)

- A crystalline material is pre-coated with silicone and disappears after the cure. The width from 200 to 600 µm.
Silicone Envelope

1. Silicone = O + C + Si linked to methyl groups = Polymethylsiloxane = OIL

2. Polymerization and Poly-condensation:
   RTV (room temperature vulcanization) to obtain macromolecules of large chains
   
   - A. Acid or Base as a catalyzer
   - B. Solvent (xylene)

3. It is mandatory to clean up all the debris, particles and the rest of the catalyzers and the solvent = vacuum or high temperature

THE HIGHEST QUALITY AND THE BEST SHELL IS CLEARLY RELATED TO THE ABILITY TO CLEAN THE DEBRIS AND TO MAINTAIN BEST QUALITY CONTROL
Texture

- Micro-texture
- Micro-structure

Which one is easier to clean up WITHOUT leaving small particles?
Is it possible to take out all the solvent?
This is the result of surface shedding on a porous texture (sponge).
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Silicone fragments after scratching that can result in a granuloma.
Silicone textured envelope breakdown


Adherence?

Thomas Cronin - 1962

Dacron Mesh
Polyurethane (Silimed)

- Polyurethane is comprised by toluene diisocyanate and polytetramethylene glycol. Polyester degradation.
  - After 7 days multinucleated giant formation
  - Polyurethane degradation and disruption
Jaime Anger, MD

“rush”

1 year post-op.

Polyester
“Soft Permanent Distortion”
350 cc, round
Smooth, Moderate profile
Sub-muscular
Must stay sub-glandular!
300 cc Smooth Gel
Moderate profile Sub-muscular
3 year post-op.
Smooth, Round
Moderate profile 300 cc
sub-muscular
The capsules around polyurethane and microstructured (foam like) envelopes can be macroscopically thicker and more vascularized. They contain more collagen fibers.

Vascularized area

Collagen

Vascularized area
Stir = MRI
Smooth

After and Before 1991!
Old implants before 1991, most of them were smooth.
Envelopes

- Smooth
- Textured

When and Why to use?
Textured

Are you expecting adherence and/or less capsule formation?

LAW 1 = You must know which texture do you want to use!
The textured prosthesis have are more firm because they are more coated. It diminishes the “sandglass effect”

THE INCISON MUST BE LARGER!
280 cc
“Contour”
4 years follow-up
Contour
550cc
Smooth
250 cc – Round Smooth envelope
275 cc
Smooth, Gel
Moderate Profile
2 months post-op
Axillary approach: Always smooth
“Dynamic”

“Static”
Is it possible with foam-textured?
YOU MUST HAVE A NON ADHERENT ENVELOPE, TO ALLOW MOVING
Poland Syndrome:
Pectoralis Major agenesy
Becker 35 - 290 cc
- 100 cc gel
- 190 cc saline
225 cc
Smooth, gel
Moderate profile
SUBGLANDULAR
The decision of the surgical technique may be based on the preference of the mobility and natural behavior.

Think about the type of Prosthesis !!!!!
THANK YOU
MUCHAS GRACIAS
MUITO OBRIGADO
תודה
MERCI BEAUCOUP
DANKE SCHÖN