Breast expander-implant capsules: correlation between the type of expander texturation (Biocell or Siltex), the timing of first expansion and the capsular characteristics.


Background
The type of implant texture will determine the type of capsular reaction,[1, 2] but the timing of expander filling is subject to variations[3]. In this study, we analyzed two usual schedules of filling for the two most popular breast expander texture Biocell (Allergan), and Siltex (Mentor). An observation at the electron microscopic level of the capsular reaction was achieved.

Methods:
We prospectively included 60 breast cancer patients dispatched in 4 groups: G1: Biocell first filling before day 15; G2: Biocell first filling after 6 weeks; G3: Siltex first filling before day 15; G4: Siltex first filling after 6 weeks. 1 cm² periprosthetic capsule specimens were sampled during expander to permanent implant exchange. All samples were analyzed under High Vacuum modes and Energy dispersive X-ray studies. Texture/cellularity /presence of biofilm were assessed.

Results:
All groups were constituted of 15 samples from 15 patients.
G1: Biocell first filling before day 15: very low level of texture, low cellularity and 52% of biofilm. EDX microanalysis allows detection of silicium in the capsular tissue.
G2: Biocell first filling after 6 weeks: high level of texture, high cellularity with 45% of echinocytes (red blood cells with a modified cellular membrane), no biofilm.
G3: Siltex first filling before day 15: very low level of texture, low cellularity and 22% of biofilm.
G4: Siltex first filling after 6 weeks: very low level of texture, low cellularity and 22% of biofilm.

Conclusions:
There is probably an optimal inflation scheme for each type of breast expander in order to reduce the presence of biofilm and obtain the full potential of the material. For deep texture Biocell implant there is a major interest waiting 6 weeks before the first filling.

References
Fig 1 G2 capsular reaction of Biocell \ first filling after 6 weeks

Fig 2 Biocell \ first filling before day 15