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\textbf{A scanning electron microscopic study of the surface of textured mammary implants and their capsules. Description of the adhesive "velcro" effect of porous-textured breast prostheses [Étude au microscope électronique à balayage des surfaces des implants mammaires à texturation poreuse et de leurs capsules. Description de l'effet «velcro» des prothèses à texturation poreuse]}


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\textbf{Abstract}

The efficacy of breast prosthesis texturing in the prevention of capsular contracture has been established for about 20 years. This successful procedure has led to the development and marketing of a number of different models. In the present study, four porous-textured breast prostheses have been examined: the Arion\textsuperscript{®} monoblock implant, the CUI (McGahn\textsuperscript{®}), the Biocell (Mcgahn\textsuperscript{®}), and the Sebbin\textsuperscript{®} LS21. Scanning electron microscopic (SEM) investigation of the implant surfaces of the different prostheses was carried out on new samples received from the manufacturers. During a prospective study on eight patients, capsule samples corresponding to the four above-mentioned prostheses were taken to determine whether a secondary intervention was necessary for correction of asymmetry or malpositioning. These samples were analyzed by SEM to investigate whether there could be a correlation between prosthesis texturing and the aspect of the corresponding capsules. Significant ultrastructural differences were found between the various prostheses examined: the results showed that only the CUI and Biocell\textsuperscript{®} prostheses presented a mirror image of the capsule texturing, with a correspondence between the depressions on the prosthesis and the contacts on the capsule. This finding seems to be linked to the existence of a critical size for the pores that constitute the implant surface. This observation led to the hypothesis of an adhesive "velcro" effect between the prosthesis and its capsule. Although the latter may not be directly linked to the prevention of capsular contracture it can, however, have a major effect on implant stabilization in cases of primary breast reconstruction and in possible secondary adjustments of asymmetry and malpositioning. © 2001 Éditions scientifiques et médicales Elsevier SAS.

\textbf{Author Keywords}

Breast cancer; Mammary implant; Scanning electron microscopy; Silicone

\textbf{Index Keywords}

silicone; adjustment, adult, article, breast cancer, breast endoprosthesis, breast reconstruction, clinical article, contracture, female, human, prosthesis failure, scanning electron microscopy, surface property, comparative study, equipment, middle aged, porosity, prospective study, prosthesis, reoperation, standard; Adult, Breast Implants, Equipment Failure Analysis, Female, Humans, Microscopy, Electron, Scanning, Middle Aged, Porosity, Prospective Studies, Prosthesis Design, Prosthesis Failure, Reoperation, Surface Properties

\textbf{Tradenames}

Arion; Biocell, McGhan; CUI Microcell, McGhan; Sebbin LS21

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