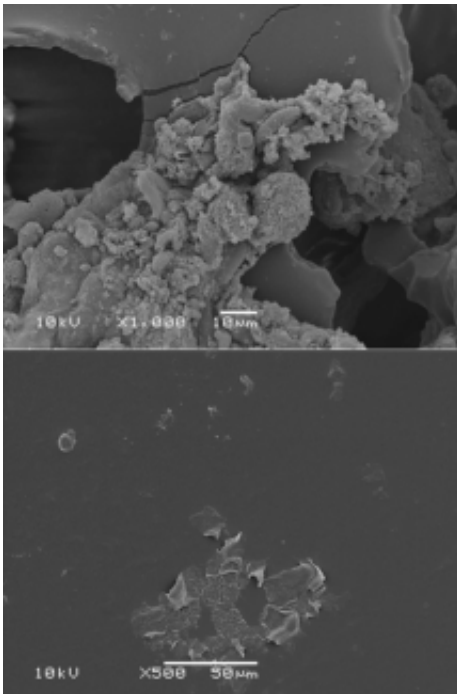


Link found between textured breast implants and rare cancer

November 11 2014



(Top) Biofilm on a textured implant, compared with (bottom) scant biofilm on a smooth implant. Credit: Surgical Infection Research Group, Australian School of Advanced Medicine

New research has revealed that infection by bacteria on the surface of textured breast implants may increase women's risk of developing a rare type of cancer – newly designated as breast implant associated anaplastic large cell lymphoma (BIA-ALCL).

Previous studies led by Associate Professor Anand Deva of Macquarie University's Australian School of Advanced Medicine have found that bacteria which live in clumps attached to [breast implants](#) (termed biofilm), is a major cause of capsular contracture. Contracture is a painful hardening of the tissue around the implant that can cause physical deformity, pain and is the most common cause for revision surgery following breast augmentation.

Professor Deva's latest study has found that the chronic infection around these infected implants can also lead to an activation of the immune system and the patient's lymphocytes. Long-term stimulation of lymphocytes by this infection may be the stimulus for the transformation of these cells into BIA-ALCL. The infection was shown to be highest around textured breast implants and this may provide an explanation as to why BIA-ALCL seems to be more commonly seen in patients with textured implants.

"Our previous research has shown that 24 hours after bacteria come into contact with breast implants, textured implants had 72 times the number of bacteria attached to their surface as compared with the smooth implants," said Deva.

"This latest study has shown that the textured implants with the highest numbers of bacteria also had the highest number of activated lymphocytes around them. This finding is important and has now become even more relevant since the reporting of BIA-ALCL as it provides us with a possible biological explanation of how this rare cancer could arise."

Professor Deva and his team in association with Dr. William P Adams from UT Southwestern in Texas, have had published a 14-step guide to reduce the risk of breast implant infection ("The Role of Bacterial Biofilms in Device-Associated Infection" *Plastic and Reconstructive*

Surgery, November 2013, page 1323), based on evidence of best practice to educate surgeons on how to reduce the risk of [bacterial contamination](#). A number of clinical studies have applied these principles of reducing bacterial contamination and successfully reduced the rate of capsular contracture by a factor of 10 in their patients.

"This is a great validation of our research and a demonstration that good science in the laboratory can be translated into real benefits to patients at the bedside. Now with our greater understanding of the importance of preventing [infection](#), we, as surgeons, can reduce the risk of capsular contracture and thereby reduce the risk of lymphocyte activation and possible transformation into BIA-ALCL," said Deva.

More information: "Chronic biofilm infection in breast implants is associated with an increased T cell lymphocytic infiltrate - implications for breast implant associated lymphoma." *Plastic & Reconstructive Surgery*: Post Acceptance: November 7, 2014 [DOI: 10.1097/PRS.0000000000000886](#)

Provided by Macquarie University

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