

# Study offers clues to how breast implants may cause lymphoma

17 September 2014



Breast implant. Credit: US Food and Drug Administration

(Medical Xpress)—There have been 71 known cases worldwide of a type of blood cancer called anaplastic large cell lymphoma (ALCL) that the researchers suggest were associated with the patient's breast implants. This means it is an extremely rare occurrence – for every three million breast implant procedures, the study estimates between one and six cases of ALCL. The ALCL was found to develop in patients, on average, 10 years after breast augmentation or reconstruction surgery. Studies have found no clear evidence of an increase in risk of any other type of cancer in women with breast implants.

ALCL typically appears in the [lymph nodes](#), skin, lungs, liver and soft tissue. It almost only ever occurs in the breast area if the patient has had breast implants and, in these cases, the tumours always develop in the [scar tissue](#) around the implant capsule. The exact reasons why implants could possibly contribute to [lymphoma](#) have remained unclear, however.

Researchers, funded by the [blood cancer](#) charity Leukaemia & Lymphoma Research, examined case reports from patients and analysed medical literature. The findings are published in the journal

Mutation Research.

ALCL patients are normally sub-divided into two groups – those with cancer cells that express an abnormal protein called anaplastic lymphoma kinase (ALK) inside the cell and those with cancer cells without the ALK protein. While eight in 10 patients with ALK-positive lymphoma survive for five years or more, ALK-negative lymphoma patients generally need more aggressive treatment and just under half survive beyond five years.

The researchers argue that implant-related ALCL, if backed by more research, should be treated as a separate clinical entity to other types of ALCL, owing to its distinctive biological characteristics. Almost all patients diagnosed with implant-related ALCL were ALK-negative and yet most actually had a very good prognosis. Of the 49 cases where information on the patients' progress was available, there were only five reported deaths.

While some patients received chemotherapy and radiotherapy, for many women their lymphoma was put into remission simply through removal of the breast implant and surrounding tissue. This suggests that it is the body's abnormal immune response to the implant that is causing the cancer. Chemotherapy was not shown to significantly increase survival in patients.

There is some evidence to suggest that simply having a prosthetic implant can increase risk as opposed to anything connected with the breast implant material, as [patients](#) with hip or knee replacements may also have a very small increased chance of developing lymphoma. Others have proposed that it is differences in lifestyles of people with and without [breast implants](#) that could be responsible. The Cambridge scientists, however, argue that the biological features of lymphomas in the presence of implants, such as the lack of ALK and the proximity to the implant, suggest a real link.

Dr Suzanne Turner, who led the research at the University of Cambridge, said, "It's becoming clear that implant-related ALCL is a distinct clinical entity in itself. There are still unanswered questions and only by getting to the bottom of this very rare disease will we be able to find alternative ways to treat it."

Dr Matt Kaiser, Head of Research at Leukaemia & Lymphoma Research, said: "It's important to remember that any breast implant-associated lymphoma is incredibly rare. It is, however, important to investigate any possible links to what causes these cancers, so that we can help people balance benefits versus risks and so that we can work out how we might be able to prevent the risks altogether."

Provided by University of Cambridge

APA citation: Study offers clues to how breast implants may cause lymphoma (2014, September 17) retrieved 19 November 2019 from <https://medicalxpress.com/news/2014-09-clues-breast-implants-lymphoma.html>

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