Editorials

Breast Implant–Associated Anaplastic Large Cell Lymphoma

Binita S. Ashar, MD, FACS; Sung W. Yoon, MD, FACS; and Steven Nagel, MD, FACS, Center for Devices and Radiological Health, U.S. Food and Drug Administration, Silver Spring, Maryland

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In 2011, the U.S. Food and Drug Administration (FDA) identified a possible association between breast implants and the development of anaplastic large cell lymphoma (ALCL).[1] At that time, the FDA knew of so few cases of the disease that it was not possible to determine which factors increased a patient's risk. The FDA recognized the need to gather additional information to better characterize ALCL in individuals with breast implants.[1] In 2016, the World Health Organization recognized breast implant–associated ALCL as a type of lymphoma that can develop following breast implants.[2] The exact number of cases was difficult to determine because of limitations in global reporting and a lack of global breast implant sales data.

Since 2011, the FDA has taken several steps to better understand this issue, including an in-depth review of post-approval study data, medical device reports, scientific literature, breast implant–specific registries, and public discussions. In March 2019, the FDA discussed many breast implant concerns in a public advisory committee meeting.[3] In July 2019, based on currently available information, the FDA requested that the company Allergan voluntarily recall its BIOCELL textured breast implants and BIOCELL textured tissue expanders because of an increased risk of implant-associated ALCL.[4]

In October 2019, the FDA released draft guidance offering numerous recommendations to help ensure women have access to breast implant benefit and risk information, including that manufacturers incorporate a boxed warning and patient decision checklist in the device's labeling, and update recommendations for patient screening for device rupture and more.[5]

Many people, including those undergoing reconstruction following breast cancer, choose breast implants every year.[6] As a public health agency, the FDA plays an important role in ensuring that physicians and patients seeking breast augmentation and breast reconstruction have accurate information about the benefits and risks of breast implants to make informed decisions.

What is breast implant–associated ALCL?

Breast implant–associated ALCL is a type of non-Hodgkin lymphoma. Patients with breast implant–associated ALCL typically present years after implant placement with changes in the look or feel around their breast implant. Symptoms such as persistent swelling or pain in the area of the breast implant may be attributed to an underlying seroma or mass associated with the implant capsule. Less common presentations include lymphadenopathy, rash, and capsular contracture.[7] Breast implant–associated ALCL typically develops in the scar tissue and fluid surrounding the implant and is usually successfully treated with prompt removal of the implant and surrounding scar capsule. Chemotherapy or radiation therapy may be indicated for some patients. Although the overall incidence of breast implant–associated ALCL is low, it is a serious diagnosis with a risk of death, particularly if treatment is suboptimal or delayed.

All patients with breast implants are at risk of developing breast implant–associated ALCL. Although the risk is generally considered to be low, it is higher for patients with textured surface implants vs. smooth surface implants. The exact number of patients who currently have breast implants is not known; however, breast implant history dates back to the 1960s.[8] The first case of breast implant–associated ALCL was described in the literature in 1997.[9] As of July 6, 2019, the FDA has received 573 U.S. and global medical device reports of breast implant–associated ALCL, including 33 deaths. The exact etiology is unknown; however, among all textured breast implants marketed in the United States, Allergan's BIOCELL textured breast implants were found to have an approximately six times higher risk of associated ALCL than other textured implants sold in this country.[4]

How concerned should patients with breast implants be about the risk of breast implant–associated ALCL?

The longer patients have breast implants, the more likely they are to have complications requiring reoperation or removal.[10,11] Breast implants need to be monitored for as long as patients have them.[11] Patients should discuss recommended follow-up with their surgeon and continue follow-up evaluations. They should contact their clinician if they notice any changes around their breast implant. The FDA does not recommend prophylactic implant removal in asymptomatic patients because the overall incidence of breast implant–associated ALCL is low.

What should I do if I have a patient with changes around a breast implant?

Any patient who has a change in the area around a breast implant should be evaluated by a plastic surgeon. The initial evaluation typically involves a physical examination, diagnostic imaging such as ultrasonography or magnetic resonance imaging,[12] and fine-needle aspiration of fluid with

cytology, including anaplastic lymphoma kinase and CD30 biomarkers, and pathology of the mass associated with the breast implant, if present. All patients diagnosed with ALCL should be evaluated by a multidisciplinary team (e.g., oncologist, pathologist, surgical oncologist, plastic surgeon).[12] It is important for patients to undergo diagnostic assessment before implant removal so that the proper operation is chosen. Surgery for breast implant–associated ALCL involves removal of the implant and the surrounding scar capsule, which is a more extensive operation than implant removal alone. Information on breast implant–associated ALCL and case reports of breast implant-associated ALCL received by the FDA can be found at https://www.fda.gov/medical-devices/breast-implants/medical-device-reports-breast-implant-associated-anaplastic-large-cell-lymphoma.

How can patients and physicians contribute to our collective understanding of breast implant–associated ALCL?

There are several ways to report confirmed breast implant–associated ALCL cases to help further our understanding of breast implant-associated risk. First, the FDA's MedWatch database (https://www.fda.gov/safety/medwatch-fda-safety-information-and-adverse-event-reporting-program) collects information on all adverse events that can occur with all medical devices and is open to patients, clinicians, health care facilities, and manufacturers within and outside the United States. For patients with breast implant–associated ALCL, specifics of each patient's history, diagnosis, and implant type, and information about tissue expanders, if applicable, are helpful. Alternatively, the patient's diagnosis can be reported to the breast implant device manufacturer who should submit the case to the FDA's MedWatch database as part of their mandatory reporting requirements. Also, the **P**atient **R**egistry and **O**utcomes **F**or breast **I**mplants and anaplastic large cell **L**ymphoma etiology and **E**pidemiology (PROFILE; https://www.thepsf.org/research/registries/profile) website is open to physicians to report detailed information on confirmed cases of breast implant–associated ALCL in the United States. This registry is a joint effort by the FDA and the Plastic Surgery Foundation to further the understanding of this disease.

Address correspondence to Binita S. Ashar, MD, FACS, at Binita.Ashar@fda.hhs.gov. Reprints are not available from the authors.

Author disclosure: No relevant financial affiliations.

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