

# Letters

## COMMENT & RESPONSE

### Additional Risk Factors for Breast Implant-Associated Anaplastic Large Cell Lymphoma

**To the Editor** I read with great interest the systematic review by Leberfinger et al<sup>1</sup> on breast implant-associated anaplastic large cell lymphoma (BIA-ALCL). The authors analyze 95 patients with BIA-ALCL and suppose it is caused by a complex process involving many factors, including bacterial biofilm growth, textured implant surface, immune response, and genetics of the patient. They also state that none of the reported patients presented with anaplastic lymphoma kinase,<sup>1</sup> which is typically found in 60% of patients with systemic ALCL. Leberfinger et al<sup>1</sup> raise the possibility that the BIA-ALCL is related to an inflammatory process secondary to a reaction process to the breast implant. They also speculate that the literature establishes that chronic inflammation can lead to a lymphoma.

It is interesting that the article does not cite extravasation of silicone in intact breast implants as a possible cause of BIA-ALCL. According to Kappel et al,<sup>2</sup> silicone bleeding is inherent in all types or models of silicone breast implants. Both silicone and saline implants have a silicone elastomer surface composed of polydimethylsiloxane and a residual platinum catalyst. It is speculated that heat, ultraviolet radiation, oxidation, and chemical reaction between the implant materials can be causes of change of the permeability of the surfaces of the implants for gases and liquids, which would allow the influx of biological fluids. This results in suspension and transport of the polydimethylsiloxane 3 material, which may come into contact with the fibrous capsule of the implant.

In a 2017 study carried out by my group,<sup>3</sup> we present a comparison of the findings between a patient with BIA-ALCL with a patient with silicone-induced granuloma of breast implant (SIGBIC). Both clinical and imaging aspects of the patients were very similar. However, at histology, the patient with BIA-ALCL presented with a monoclonal predominance of CD30+ lymphocytes, whereas the patient with SIGBIC presented with a poly-

clonal epithelioid granulomatous process with giant cells induced by silicone. The 2 patients had implants with no signs of rupture.<sup>3</sup> From this article, we reviewed the main magnetic resonance imaging findings related to SIGBIC and began a prospective study to evaluate the incidence of SIGBIC.<sup>4</sup> To our surprise, preliminary results of 437 magnetic resonance images of patients with intact breast implants demonstrate SIGBIC findings in 15.6% of the patients.

We believe that given the evidence described above and given the high frequency of SIGBIC, it would be very important to mention the presence of silicone bleeding of breast implants as a possible cause of ALCL.

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**Published Online:** May 9, 2018. doi:10.1001/jamasurg.2018.1119

**Conflict of Interest Disclosures:** None reported.

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