

# CASE REPORT

Nagoya J. Med. Sci. 85. 852–856, 2023  
doi:10.18999/nagjms.85.4.852

## Ruptured breast implant removal because of patient anxiety in the absence of breast implant-associated anaplastic large cell lymphoma

Hitomi Takahashi<sup>1</sup>, Hideyoshi Sato<sup>1</sup>, Yukiyo Tsunekawa<sup>1</sup>, Urara Fujioka<sup>1</sup>,  
Yumi Wanifuchi-Endo<sup>2</sup>, Tatsuya Toyama<sup>2</sup> and Kazuhiro Toriyama<sup>1</sup>

<sup>1</sup>*Department of Plastic & Reconstructive Surgery, Nagoya City University Graduate School of  
Medical Sciences and Medical School, Nagoya, Japan*

<sup>2</sup>*Department of Breast Surgery, Nagoya City University Graduate School of  
Medical Sciences and Medical School, Nagoya, Japan*

### ABSTRACT

Breast implant-associated anaplastic large cell lymphoma (BIA-ALCL) has been regarded as a long-term problem after silicone breast implantations. We report a case in which BIA-ALCL and breast cancer were not detected preoperatively, with subsequent removal of a ruptured breast implant. A 52-year-old woman had silicone breast implants on both sides for breast augmentation 15 years ago. Right axillary lymphadenopathy and intracapsular ruptures were noted by magnetic resonance imaging. Right axillary lymph node biopsy was performed at our department of breast surgery. Flow cytometry for BIA-ALCL was also performed using the exudate around the implant. The results were negative for breast cancer and BIA-ALCL. However, taking into consideration exacerbation of breast implant rupture and the patient's anxiety about BIA-ALCL, ruptured bilateral implants were removed by total capsulectomy. The postoperative course was uneventful 1 year after the operation, and her anxiety was dispelled despite her breast deformity. Appropriate explanation and periodic examination may be required to prevent excessive anxiety.

Keywords: appropriate explanation, breast implant-associated anaplastic large cell lymphoma, patient anxiety, ruptured implant

Abbreviation:

BIA-ALCL: breast implant-associated anaplastic large cell lymphoma

This is an Open Access article distributed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view the details of this license, please visit (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

### INTRODUCTION

Postoperative complications of silicone breast implants include implant rupture, capsular contracture, and breast implant-associated anaplastic large cell lymphoma (BIA-ALCL).<sup>1</sup> In a cohort of 264 patients who received Allergan Natrelle round implants, magnetic resonance

---

Received: September 7, 2022; accepted: February 2, 2023

Corresponding Author: Kazuhiro Toriyama, MD, PhD

Department of Plastic & Reconstructive Surgery, Nagoya City University Graduate School of  
Medical Sciences, 1 Kawasumi, Mizuho-cho, Mizuho-ku, Nagoya 467-8602, Japan

Tel: +81-52-858-7514, E-mail: toriyama@med.nagoya-cu.ac.jp

imaging revealed that the 10-year rupture rate was 9.3% for primary augmentation.<sup>2</sup> In Japan, BIA-ALCL has become widely known since the first Japanese case was reported.<sup>3</sup> Diagnostic and treatment guidelines for BIA-ALCL were published in 2020.<sup>4</sup> Here, we report a case in which BIA-ALCL and breast cancer were not detected preoperatively, but the ruptured implant was removed because of potential future complications and the patient's anxiety.

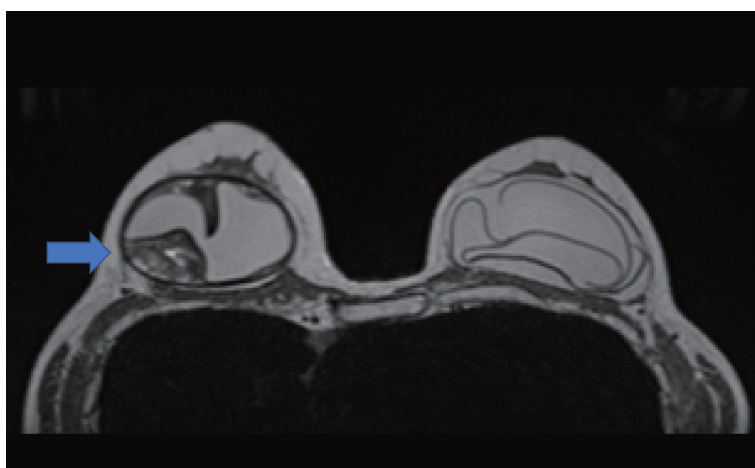
## CASE PRESENTATIONS

A 52-year-old female presented with right breast hardening and right axillary swelling. She had undergone bilateral breast augmentation 15 years previously. Magnetic resonance imaging suggested intracapsular rupture of both implants (Figure 1).

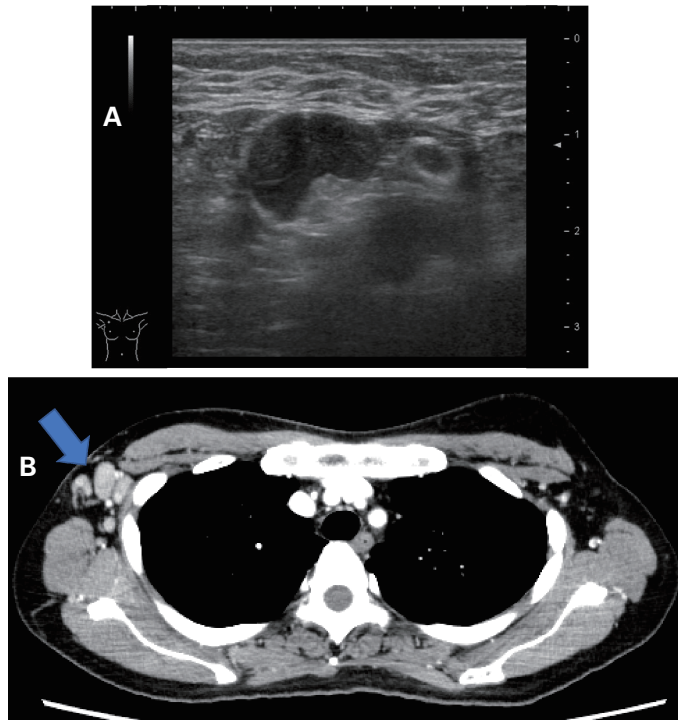
The right implant showed a mass on the outside of the shell (arrow) and hematoma or inflammatory granuloma was suspected, which necessitated detailed examination for BIA-ALCL and breast cancer. Ultrasound examination and computed tomography of the right axillary region were performed, which revealed numerous lymphadenopathies suggestive of breast cancer metastasis (Figure 2).

Aspiration cytology from the exudate around the implant and right axillary lymph node biopsy were performed at our department of breast surgery. Pathological findings showed many swollen lymphoid follicles but no atypical cells or evidence of metastasis, and we made a diagnosis of reactive hyperplasia. The exudate around the implant was punctured in accordance with the guideline for BIA-ALCL and analyzed by flow cytometry. The results ruled out breast cancer and BIA-ALCL.

We offered the patient the choice of observation or explantation. The pathological results failed to counteract the patient's anxiety about BIA-ALCL. There was also the risk of exacerbation from intracapsular to extracapsular rupture of the implant. Therefore, we decided to remove the implants by total capsulectomy (Figure 3A). The histopathological findings showed inflammatory granuloma and organized hematoma (Figure 3B).



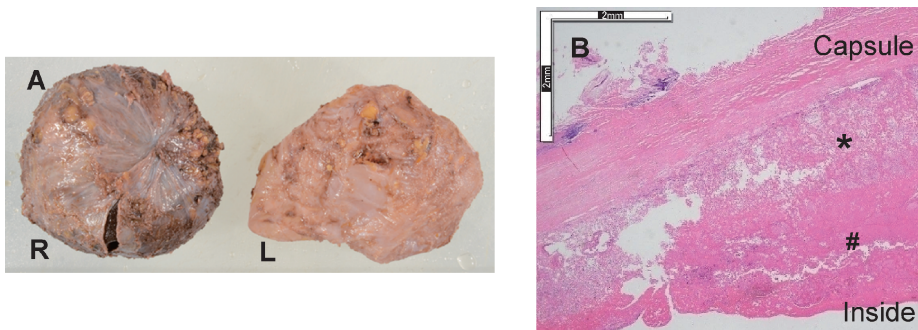
**Fig. 1** Magnetic resonance imaging showing intracapsular rupture of both implants. The right implant showed a mass on the outside of the shell (arrow) and was suspected to be hematoma or inflammatory granuloma. These findings suggested that detailed examination for breast implant-associated anaplastic large cell lymphoma was necessary.



**Fig. 2** Examination of the right axillary region

**Fig. 2A:** Ultrasound examination showed level 1 axillary lymphadenopathy.

**Fig. 2B:** Computed tomography showed level 1 axillary lymphadenopathies (arrow).



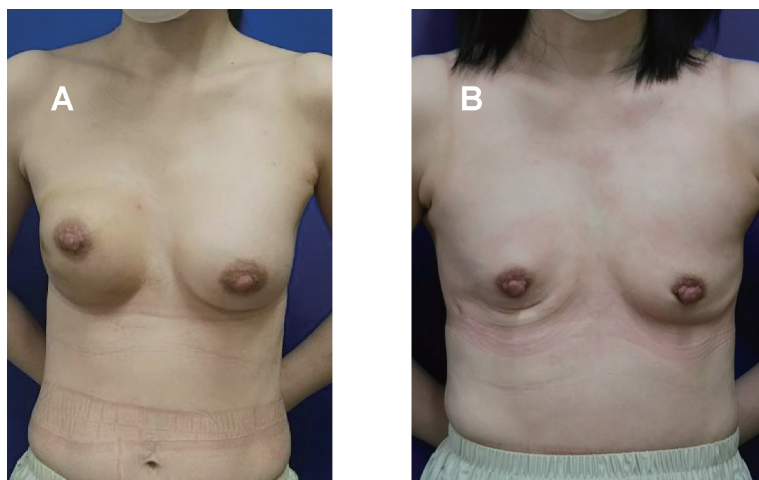
**Fig. 3** Implants and histopathological findings

**Fig. 3A:** Explanted implants with capsules. R indicates right side implant; and L, left side implant.

**Fig. 3B:** Histopathological findings showed inflammatory granuloma (\*) and organized hematoma (#). Scale bar indicates 2 mm.

Breast cancer was ruled out because there was no evidence of epithelial cell atypia or proliferation. BIA-ALCL was also ruled out because there were no atypical lymphocytes. The postoperative course was uneventful 1 year after the operation (Figure 4).

The patient was relieved despite her breast deformity because her anxiety about BIA-ALCL had been dispelled.



**Fig. 4** Postoperative course

**Fig. 4A:** Front view before surgery.

**Fig. 4B:** Front view one year after surgery.

## DISCUSSION

There was a recent report in France of a woman with ruptured Poly Implant Prothese implants who developed ALCL. However, there is no evidence of any direct link between rupture of silicone-gel implants and ALCL because ALCL has also been reported in patients with saline-filled implants.<sup>5,6</sup>

There are still many unknown factors about BIA-ALCL, and excessive examinations may be carried out, which can lead to patient anxiety. Plastic and cosmetic surgeons need to explain to patients that the risk of BIA-ALCL is very low and that follow-up is possible with periodic ultrasound or magnetic resonance imaging to check for tumor lesions<sup>7</sup> and progression of implant damage. To that end, plastic and cosmetic surgeons should become as familiar with breast ultrasound examination as breast surgeons are.

In our case, magnetic resonance imaging for suspected BIA-ALCL and flow cytometry were negative. However, the patient had continued anxiety about BIA-ALCL because of the remnants of the ruptured implants. The condition of her breasts, such as hardening and deformation, had a negative impact on her emotional well-being. Explantation eventually dispelled her anxiety about BIA-ALCL and breast hardening, and she felt relieved despite her breast deformity.

In general, symptomatic patients with ruptured implants should be offered the choice of observation, or explantation and capsulectomy with or without replacement.<sup>2</sup> Previously, rupture of silicone implants has potentially led to the development of breast cancer and connective tissue disease.<sup>1</sup> Recently, the incidence of breast cancer in patients with silicone implants has been extensively studied, and no association between these devices and breast cancer has been found.<sup>8</sup> There appears to be little scientific basis for any association between implant rupture and well-defined, undefined, or atypical connective tissue disease.<sup>9</sup> Swezey et al<sup>10</sup> recommended that ruptured silicone implants, whether intracapsular or extracapsular, should be removed because of the possible interaction with surrounding tissue and spread to local lymph nodes.

It is therefore the responsibility of plastic surgeons to appropriately counsel patients on the risks and benefits of breast implant explantation, as well as the physical defects often left

following explantation.<sup>8</sup> In the present case, we offered the patient the choice of observation or explantation. The patient opted for explantation, which was supported by our surgeons because of the risk of exacerbation of implant rupture, and to relieve the patient's anxiety about BIA-ALCL.

## LIMITATIONS

Long-term follow-up is needed in this case. Consideration of replacement after explantation is also needed in the near future.

## ACKNOWLEDGMENTS

We thank Cathel Kerr, BSc, PhD, from Edanz (<https://jp.edanz.com/ac>) for editing a draft of this manuscript.

## DISCLOSURE STATEMENT

The authors declare no competing interests.

## REFERENCES

- 1 Coroneos CJ, Selber JC, Offodile AC 2nd, Butler CE, Clemens MW. US FDA Breast Implant Postapproval Studies: Long-term Outcomes in 99,993 Patients. *Ann Surg*. 2019;269(1):30–36. doi:10.1097/SLA.0000000000002990.
- 2 Hillard C, Fowler JD, Barta R, Cunningham B. Silicone breast implant rupture: a review. *Gland Surg*. 2017;6(2):163–168. doi:10.21037/gs.2016.09.12.
- 3 Ohishi Y, Mitsuda A, Ejima K, et al. Breast implant-associated anaplastic large-cell lymphoma: first case detected in a Japanese breast cancer patient. *Breast Cancer*. 2020;27(3):499–504. doi:10.1007/s12282-020-01064-5.
- 4 Japan Society of Plastic and Reconstructive Surgery. Key points of breast implant-associated anaplastic large cell lymphoma [in Japanese]. <https://jsprs.or.jp/member/committee/breast-implant-guideline/bia-alcl>. Accessed October 2, 2020.
- 5 Handel N, Garcia ME, Wixtrom R. Breast implant rupture: causes, incidence, clinical impact, and management. *Plast Reconstr Surg*. 2013;132(5):1128–1137. doi:10.1097/PRS.0b013e3182a4c243.
- 6 Kim B, Roth C, Young VL, et al. Anaplastic large cell lymphoma and breast implants: results from a structured expert consultation process. *Plast Reconstr Surg*. 2011;128(3):629–639. doi:10.1097/PRS.0b013e31821f9f23.
- 7 Gidengil CA, Predmore Z, Mattke S, van Busum K, Kim B. Breast implant-associated anaplastic large cell lymphoma: a systematic review. *Plast Reconstr Surg*. 2015;135(3):713–720. doi:10.1097/PRS.0000000000001037.
- 8 Kaplan J, Rohrich R. Breast implant illness: a topic in review. *Gland Surg*. 2021;10(1):430–443. doi:10.21037/gs-20-231.
- 9 Hölmich LR, Lipworth L, McLaughlin JK, Friis S. Breast implant rupture and connective tissue disease: a review of the literature. *Plast Reconstr Surg*. 2007;120(7 Suppl 1):62S–69S. doi:10.1097/01.prs.0000286664.50274.f2.
- 10 Swezey E, Shikhman R, Moufarrege R. Breast Implant Rupture. In: *StatPearls [Internet]*. Treasure Island (FL): StatPearls Publishing; date unknown. <https://www.ncbi.nlm.nih.gov/books/NBK459308>. Accessed January 21, 2022.