INTERNATIONAL SEVEN JOURNAL
OF HEALTH RESEARCH
ISSN: 2764-9415

BREAST IMPLANT-ASSOCIATED ANAPLASTIC LARGE CELL LYMPHOMA: CASE REPORT

LINFOMA ANAPLÁSICO DE GRANDES CÉLULAS ASSOCIADO A IMPLANTE MAMÁRIO: RELATO DE CASO

LINFOMA ANAPLÁSICO DE CÉLULAS GRANDES ASOCIADO A IMPLANTE MAMARIO: REPORTE DE CASO

https://doi.org/ 10.56238/isevjhv5n2-001

Receipt of originals: 02/10/2026 **Acceptance for publication:** 03/10/2026

Eduarda Gomes Martins, Rafael Henrique Szymanski Machado, Daniele Pitanga, Camille Paciello Castro Moreira

ABSTRACT

Breast implant–associated anaplastic large cell lymphoma (BIA-ALCL) is a rare T-cell neoplasm mainly related to the use of textured breast implants. It usually presents as a late periprosthetic seroma, occurring years after implant surgery. We report the case of a 45-year-old patient with a history of augmentation mammoplasty with polyurethane implants who developed a persistent late seroma. After prolonged clinical and radiological follow-up, aspiration of the periprosthetic fluid revealed CD30-positive malignant cells, confirming the diagnosis of BIA-ALCL. The patient underwent bilateral breast explantation with complete capsulectomy, with no evidence of residual neoplasia in the surgical specimens. This case highlights the importance of clinical suspicion and cytopathological analysis of periprosthetic fluid in patients with late seroma, enabling early diagnosis and appropriate treatment, with a direct impact on prognosis.

Keywords: Anaplastic Large Cell Lymphoma. Breast Implants. Late Seroma. Implant-Associated Lymphoma. Breast Neoplasms.

RESUMO

O linfoma anaplásico de grandes células associado a implante mamário (BIA-ALCL) é uma neoplasia rara de células T, relacionada principalmente ao uso de implantes mamários texturizados. Geralmente manifesta-se como seroma periprótese tardio, anos após a cirurgia de implante. Relata-se o caso de uma paciente de 45 anos, com histórico de mamoplastia de aumento com próteses de poliuretano, que evoluiu com seroma tardio persistente. Após seguimento clínico e radiológico prolongado, a punção do líquido periprótese evidenciou células malignas CD30 positivas, confirmando o diagnóstico de BIA-ALCL. A paciente foi submetida à explantação mamária bilateral com retirada completa das cápsulas, sem evidência de neoplasia residual nas peças cirúrgicas. O caso reforça a importância da suspeição clínica e da análise citopatológica do líquido periprótese em pacientes com seroma tardio, permitindo diagnóstico precoce e tratamento adequado, com impacto direto no prognóstico.

Palavras-chave: Linfoma Anaplásico de Grandes Células. Implantes Mamários. Seroma Tardio. Linfoma Associado a Implante. Neoplasias da Mama.

INTERNATIONAL SEVEN JOURNAL
OF HEALTH RESEARCH
ISSN: 2764-9415

RESUMEN
El linfoma anaplásico de células grandes asociado a implante mamario (BIA-ALCL) es una neoplasia rara de células T, relacionada principalmente con el uso de implantes mamarios texturizados. Generalmente se manifiesta como un seroma periprotésico tardío, años después de la cirugía de implante. Se presenta el caso de una paciente de 45 años, con antecedente de mamoplastia de aumento con prótesis de poliuretano, que evolucionó con seroma tardío persistente. Tras un seguimiento clínico y radiológico prolongado, la punción del líquido periprotésico evidenció células malignas CD30 positivas, confirmando el diagnóstico de BIA-ALCL. La paciente fue sometida a explantación mamaria bilateral con retirada completa de las cápsulas, sin evidencia de neoplasia residual en las piezas quirúrgicas. Este caso refuerza la importancia de la sospecha clínica y del análisis citopatológico del líquido periprotésico en pacientes con seroma tardío, permitiendo un diagnóstico precoz y un tratamiento adecuado, con impacto directo en el pronóstico.

Palabras clave: Linfoma Anaplásico de Células Grandes. Implantes Mamarios. Seroma Tardío. Linfoma Asociado a Implante. Neoplasias de la Mama.

1 INTRODUCTION

Breast implant associated anaplastic large cell lymphoma (BIA-ALCL) is a CD30+ T cell and ALK lymphoma of the non-Hodgkin lymphoma group. It is a malignant disease, recently discovered and possibly associated with breast implants, especially textured implants, used in both cosmetic and reconstructive surgeries. BIA-ALCLS are a subtype of T lymphoma that accounts for 10% of non-Hodgkin's lymphomas of the breast.

1.1 HISTORY

Leech and Creech described the first case of anaplastic large cell lymphoma associated with breast implantation. The first epidemiological study published was in 2008 and in 2016 the pathology was included in the classification of lymphoid neoplasms. Since the first case described in 1997, about 600 cases have been described.

1.2 EPIDEMIOLOGY

It is a rare disease accounting for about 2 to 3% of all non-Hodgkins lymphomas in adults and about 0.5% of all breast cancers.

According to the International Society of Plastic Surgery, Brazil leads the second place in breast prosthesis surgeries, behind only the United States, although when the incidence of BIA-ALCL was found around the world, several variations were also identified (extremely rare in Asia compared to Western countries; lower relative incidence in Brazil and Europe, and higher incidences in Australia and New Zealand). Possibly these variations are related to the predominance of smooth versus textured implants in each country and genetic and ethnic predisposition.

1.3 CLINICAL MANIFESTATIONS

Although periprosthesis seroma is rare, demonstrated in about less than 1% of breast implant cases in the first year, this pathology can manifest as seroma or mass that appears around 9 to 10 years after the first breast implant placement surgery, both in aesthetic procedures and in breast reconstruction surgeries after breast cancer treatment.

Other manifestations include breast edema, asymmetry, pain, tumor mass around the implant, and local hyperemia. Presentation as a tumor mass with lymph node involvement is rare, presenting in about 10 to 20%,

It has been proposed that the development of the disease is associated with three main factors: textured breast implants, bacterial infection (biofilm), and genetic predisposition.

1.4 DIAGNOSIS

The diagnosis requires adequate clinical and laboratory evaluation, therefore, to make the diagnosis, it is important to use imaging methods such as breast ultrasound, magnetic resonance imaging, and PET-CT. In addition, the periprosthesis fluid should be evaluated with a fine-needle puncture and subsequent cytological analysis and breast biopsies of suspicious masses should preferably be evaluated by a hematopathologist.

Magnetic resonance imaging is essential to exclude bilateral disease.

the histopathological analysis of the biopsies will demonstrate the presence of a large number of pleomorphic cells and uniform expression of CD30 and T cell cells.

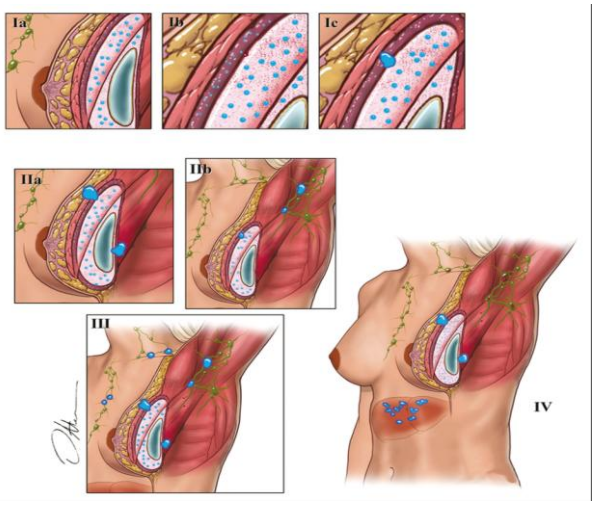
1.5 STAGING

Table 1

Proposed TNM Staging for breast implant-associated anaplastic Large-cell lymphoma

Table 1. Proposed TNM Staging for Breast Implant–Associated Anaplastic Large-Cell Lymphoma

TNM or Stage Designation	Description
T: tumor extent	
T1	Confined to effusion or a layer on luminal side of capsule
T2	Early capsule infiltration
T3	Cell aggregates or sheets infiltrating the capsule
T4	Lymphoma infiltrates beyond the capsule
N: lymph node	
N0	No lymph node involvement
N1	One regional lymph node (+)
N2	Multiple regional lymph nodes (+)
M: metastasis	
M0	No distant spread
M1	Spread to other organs/distant sites
Stage	
IA	T1N0M0
IB	T2N0M0
IC	T3N0M0
IIA	T4N0M0
IIB	T1-3N1M0
III	T4N1-2M0
IV	TanyNanyM1



Source: CLEMENS, Mark W. et al. Complete Surgical Excision Is Essential for the Management of Patients With Breast Implant–Associated Anaplastic Large-Cell Lymphoma. Journal of Clinical Oncology, v. 34, n. 2, p. 160-168, 2016. DOI: https://doi.org/10.1200/JCO.2015.63.3412.

2 TREATMENT

The treatment must be carried out in a multidisciplinary way, with the participation of the Mastologist, Plastic Surgeon, Hematologist and Oncologist. Adjuvant treatment is carried out with the clinical oncology or hematology team, follow-up should be done every three to six months for the first two years in cases of BIA-ALCL, the placement of a new prosthesis is not recommended.

The most commonly used chemotherapy regimen was cyclophosphamide, doxyrubicin, vincristine, and prednisolone. The most recommended treatment consists of complete excision of the prosthesis and its capsule bilaterally.

3 CASE REPORT

Patient F.R.F., female, 45 years old, without comorbidities, was seen, for the first time, at the Federal Hospital of Lagoa, in the outpatient sector of the Mastology specialty on 03/14/2023 for evaluation of late seroma.

She reported that she underwent breast augmentation in 2015, and the prosthesis was placed with a polyurethane coating, retroglandular location, Silimed, volume of 230 milliliters, evolving about a year ago with the presence of late seroma identified in an imaging exam. Initial physical examination showed no changes.

She presented in consultation, mammography on 08/05/2022 BIRADS 1 (figure 1), magnetic resonance imaging on 11/29/2022 (figure 2), classified as BIRADS 3, with the presence of intracapsular fluid and late enhancement of the fibrous capsule bilaterally evident on the left that may suggest capsular contracture, in addition to the presence of non-nodular, focal and homogeneous enhancement measuring 10x3x3mm in the retroareolar region of the right breast, 5 mm from the papilla and 6 mm from the skin.

Figure 1

Mammography on 08/05/2022

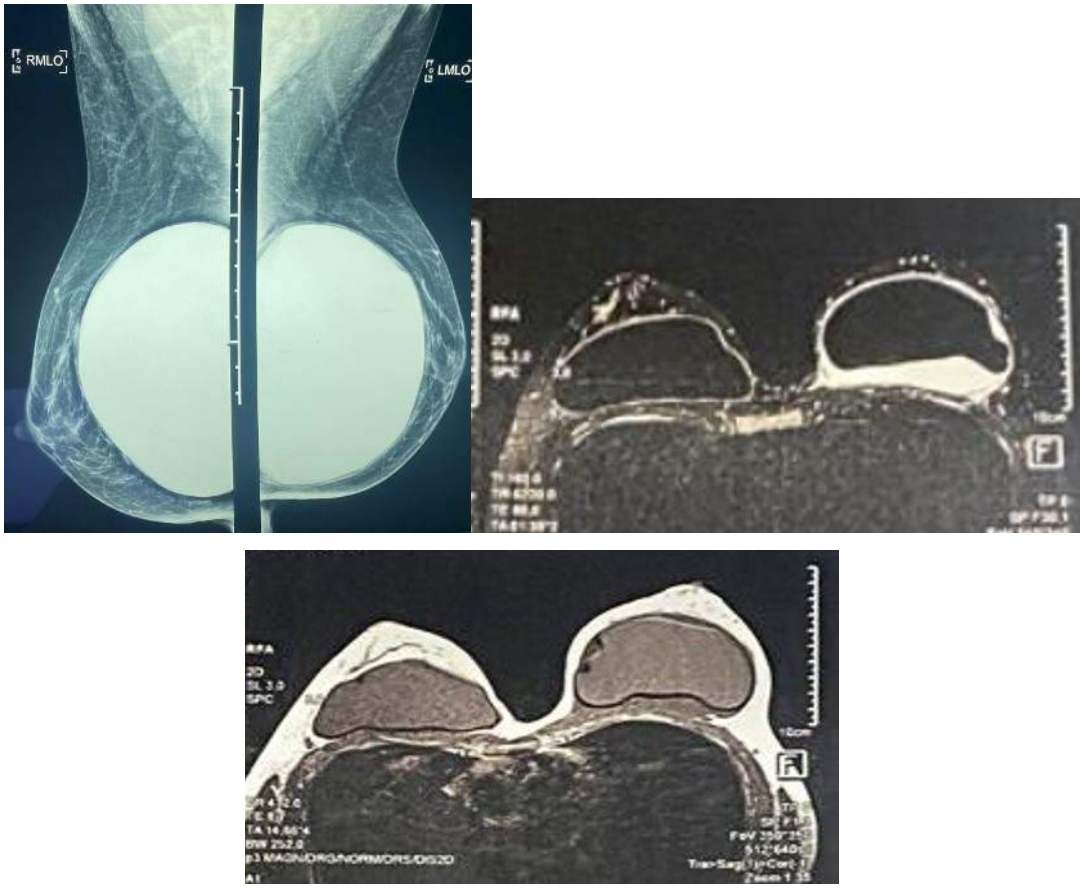
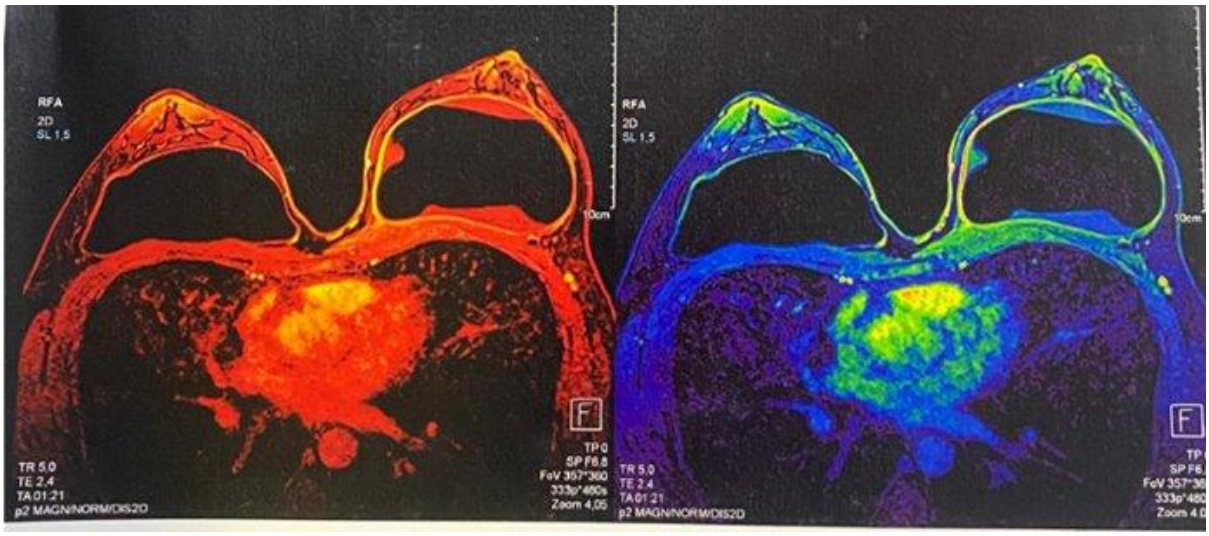


Figure 2

Magnetic resonance imaging as of 11/29/2022

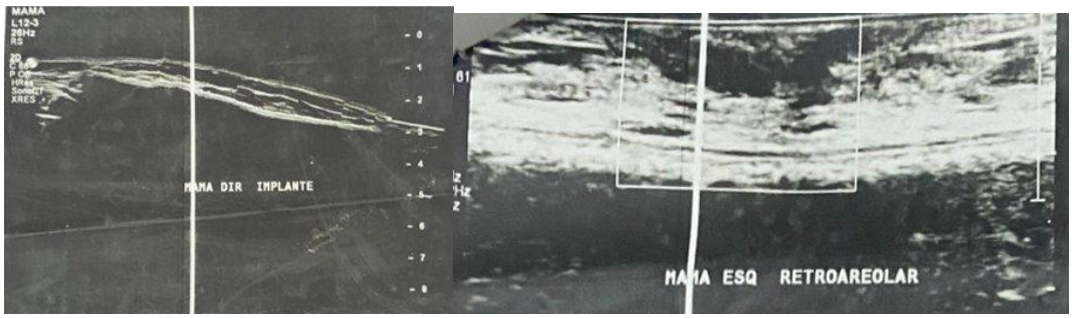


The patient underwent seroma aspiration with a cytopathological report of breast perimplantation fluid demonstrating the presence of epithelial cells, not identified as cell block, due to lack of cells. In the initial consultation, a second look breast ultrasound was requested to evaluate nodular enhancement on MRI and was referred to Plastic Surgery.

He returned for care on 06/21/2023 with an ultrasound performed on 05/17/2023 (figure 3) demonstrating retroglandular implants without signs of extra or intracapsular rupture, left implant with rounded contours and small amount of pericapsular free fluid (which may represent initial capsular contracture), usual lymph nodes at the levels of the axillary regions, classified as category 2. In this consultation, a control magnetic resonance imaging was requested again and referral for evaluation of Plastic Surgery was reinforced.

Figure 3

Ultrasonography on 05/17/2023



On 10/10/2023, she underwent a new service at Mastology, with control magnetic resonance imaging performed on 09/06/2023, BIRADS 3, with signs suggestive of capsular contracture in the breasts, more evident on the left (presence of intracapsular fluid), non-nodular, focal and homogeneous enhancement measuring 10x3x3 mm in the retroareolar region of the right breast, 5 mm from the papilla and 6 mm from the lateral skin. He was still awaiting evaluation by Plastic Surgery, and then opted for follow-up with imaging tests (ultrasonography and mammography) for six-monthly control.

On return for semiannual follow-up, the patient had a mammogram performed on 01/16/24, categorized as category 2 bilaterally, in addition to implants with no signs of rupture. He also attended with ultrasonography on 03/26/24, category 3, an ovoid nodule, isoechoic, indistinct margins, parallel, in the lateral lower quadrant, between 6 and 7

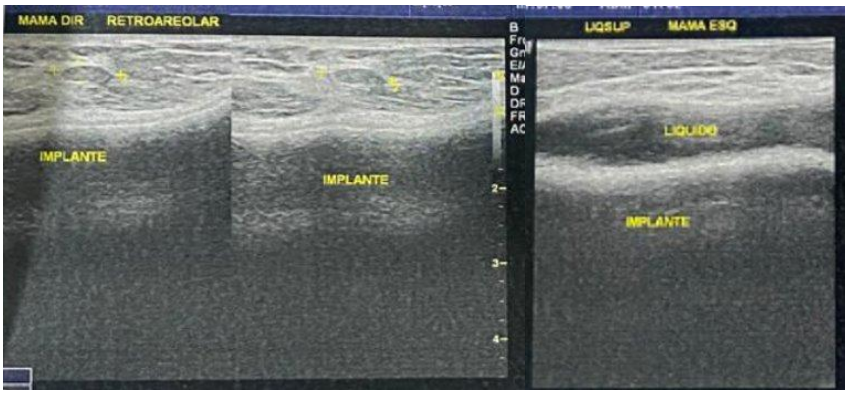
o'clock, measuring 7x3.2x7mm, retroareolar region, in correspondence to the finding of magnetic resonance imaging. left breast without alterations.

Patient kept a six-monthly return, still waiting for care by Plastic Surgery. A new magnetic resonance imaging of the breasts was performed on 10/25/24, category 3, which identified the presence of single-lumen implants, normopositioned with retroglandular location. Thickening and capsular enhancement in the left implant, suggestive of capsulitis/contracture, there is a marked intracapsular collection on the left, in addition to an area of focal non-nodular enhancement in the retroareolar region of the right breast. Again, the follow-up was followed at 6 months.

She returned on 03/11/2025 with a new breast ultrasound performed on 02/18/25 (Figure 4), category 3 with a small isoechoic, oval and circumscribed nodule measuring 9x8.3x2.4mm, located in the right retroareolar region, in probable correspondence with the magnetic resonance imaging. The left prosthesis was rounded, thick-walled, with accentuated undulations, showing a moderate amount of thick fluid in the adjacency (contracture/capsulitis?). absence of atypical lymph nodes in axillary extensions. Puncture of peri-implant fluid was recommended for evaluation of implant-associated anaplastic lymphoma.

Figure 4

Breast ultrasound performed on 02/18/25



On 05/20/2025, the patient attended Mastology with the result of a puncture performed on 03/20/2025, in a procedure 12 ml of dark yellow liquid was aspirated. macroscopy of round cells with anaplastic and hyperstained nuclei, reshuffled to the periphery with eosinophilic cytoplasm and necrotic cells. CONCLUSION: Positive for malignancy. Immunohistochemistry was compatible with anaplastic large cell lymphoma

associated with breast implants. immunopositivity with the multifocal ANTI C30 antibody, immunonegativity with the other antibodies tested. It was then defined that the patient should undergo a core biopsy of a nodule in the right breast and an explant of a breast prosthesis should be indicated in conjunction with Plastic Surgery.

The patient was evaluated by plastic surgery on 06/02/2025 and a deliberate breast explant was performed bilaterally.

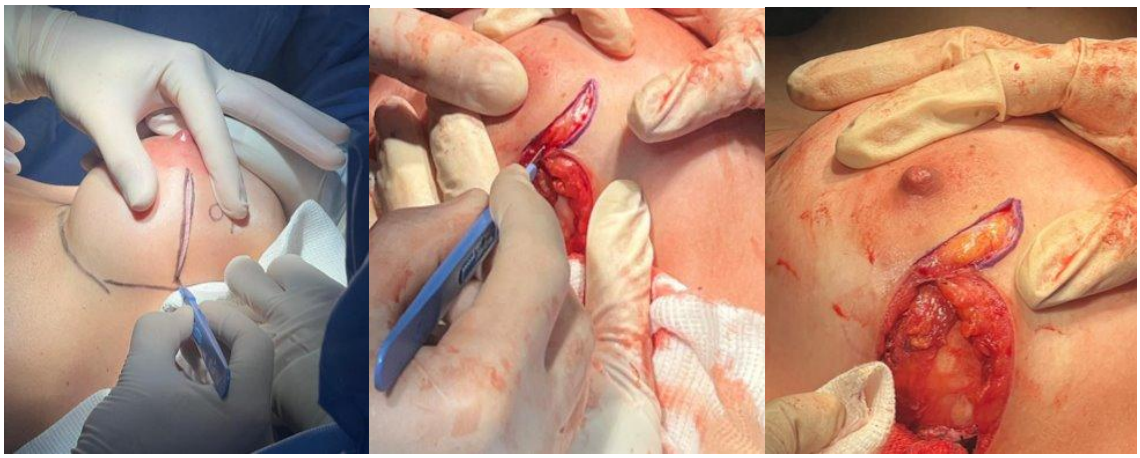
Figure 5

Preoperative image

She underwent a surgical procedure on July 24, 2025. In the procedure, an incision was chosen to join the lateral quadrants of the breast bilaterally to obtain a better surgical field, since the prosthesis had firm adherence to the muscles on the left.

Figure 6

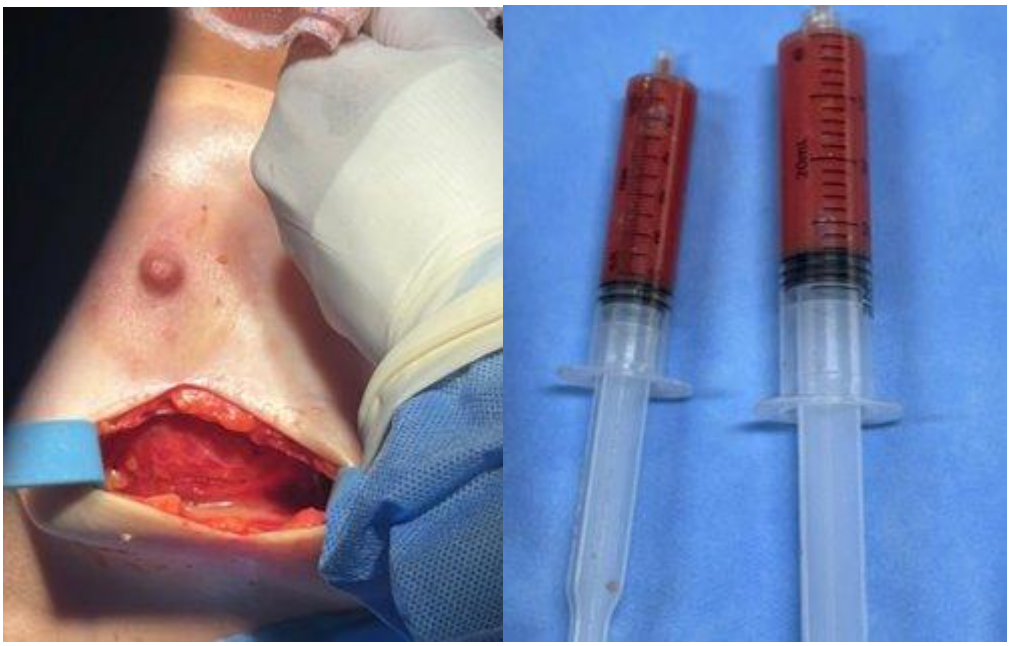
Intraoperative images



During exploration, the presence of a large amount of purulent fluid, hematic-purulent coloration, was identified in the lateral and posterior area of the prosthesis, material was collected for later cytological analysis and the rest was discarded.

Figure 7

Periprosthesis fluid



The entire prosthesis was removed with its intact capsule, respecting all anatomical limits and material was also sent for analysis by a pathologist. Capsulectomy was performed on the right side also in the same surgical procedure and the material obtained was sent for pathological analysis.

The following histopathological reports of the surgical specimens were obtained: 1) capsular tissue of the right breast (samples represented by a dense fibrous hyaline mammary capsule, with mild lymphocytic infiltrate, xanthomatous macrophages and a gigantohistiocytic reaction of the foreign body type encompassing heterologous birefringent material) 2) capsular tissue of the left breast (shows represented by a dense fibrous hyaline mammary capsule, with mild lymphocytic infiltrate, xanthomatous macrophages and reaction 3) Peri-prosthetic fluid left breast: a picture consistent with lymphoproliferative disease, favoring the clinical hypothesis of anaplastic large cell lymphoma. Both materials were sent for immunohistochemical analysis, concluding that they were breast tissue and hyalinized fibrous capsule, with foci of a gigantohistiocytic

reaction of the foreign body type involving amorphous material, absence of neoplasia in the sample.

REFERENCES

Sermoud, L. M. C. de O., Romano, S., Chved, M., & Amorim, G. L. da S. (2019). Breast implant–associated anaplastic large-cell lymphoma: Why must we learn about it? Journal of Global Oncology, 5, 1–5. https://doi.org/10.1200/JGO.19.00224

Vieira, R. A. da C., et al. (2020). Multidisciplinary approach in the clinical and laboratory investigation of a suspected case for anaplastic lymphoma associated with breast prosthesis. Mastology, 30, Article e20200030. https://doi.org/10.29289/25945394202020200030

Clemens, M. W., et al. (2016). Complete surgical excision is essential for the management of patients with breast implant–associated anaplastic large-cell lymphoma. Journal of Clinical Oncology, 34(2), 160–168. https://doi.org/10.1200/JCO.2015.63.3412

Ronchi, A., et al. (2018). Diagnosis of anaplastic large cell lymphoma on late peri-implant breast seroma: Management of cytological sample by an integrated approach. Cytopathology, 29(3), 254–261. https://doi.org/10.1111/cyt.12541

Real, D. S. S., & Resendes, B. S. (2019). Linfoma anaplásico de grandes células relacionado ao implante mamário: Revisão sistemática da literatura. Revista Brasileira de Cirurgia Plástica, 34(4), 531–538. https://doi.org/10.5935/2177-1235.2019RBCP0234

Mehta-Shah, N., Clemens, M. W., & Horwitz, S. M. (2018). How I treat breast implant–associated anaplastic large cell lymphoma. Blood, 132(18), 1889–1898. https://doi.org/10.1182/blood-2018-04-848382

Marra, A., et al. (2020). Breast implant-associated anaplastic large cell lymphoma: A comprehensive review. Cancer Treatment Reviews, 84, Article 101963. https://doi.org/10.1016/j.ctrv.2020.101963

Quesada, A. E., et al. (2019). Breast implant-associated anaplastic large cell lymphoma: A review. Modern Pathology, 32, 166–179. https://doi.org/10.1038/s41379-018-0134-3

Ebner, P. J., et al. (2019). Breast implant-associated anaplastic large cell lymphoma, a systematic review and in-depth evaluation of the current understanding. Journal of Surgical Oncology, 120(4), 573–580. https://doi.org/10.1002/jso.25626