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Breast implant rupture mimicking bia-alcl (breast implant-associated anaplastic large cell lymphoma)

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Abstract

Presentation
A 51 year old female with breast implants presented with acute onset left breast swelling.

Diagnosis
Initial imaging features on multiple modalities including mammogram, ultrasound and MRI were concerning for BIA-ALCL. Definitive treatment confirmed breast implant rupture without malignancy.

Treatment
As part of the treatment, the implant and surrounding capsule were surgically removed, and histological examination ruled out BIA-ALCL.

Discussion
BIA-ALCL is a rare lymphoma-type malignancy associated with breast implants and is important for clinicians to be aware of. We discuss the investigation and treatment of BIA-ALCL.

Introduction

Breast Implant Associated Anaplastic Large Cell Lymphoma (BIA-ALCL) is a relatively new entity, having first been described in the 1990's[1]. It is rare occurring in 1 in 3817[1] to 1 in 30,000 cases[1] with only 779 cases reported worldwide[1]; however, the low incidence may reflect underreporting[1]. BIA-ALCL can be difficult to diagnose but it is an important differential for clinicians to consider and be aware of. The incidence of BIA-ALCL is equal in both saline and silicone implants but is more common in textured rather than smooth implants. BIA-ALCL can present similarly to a peri-prosthetic fluid collection, however the management and treatment differ.

Case Report

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A 51-year-old female presented to the symptomatic breast clinic with acute onset left breast swelling. She had cosmetic silicone breast implants in situ for over twenty-five years (of unknown manufacturing brand). A mammogram demonstrated (see figure 1) left breast swelling with peri-implant hyper density (red arrow). Breast ultrasound showed a large volume of fluid surrounding the left breast implant. There were scattered echogenic foci within the fluid but no associated mass. The implant capsule appeared intact and there was no axillary lymphadenopathy. 50mls of straw-coloured fluid was aspirated and sent for microbiology, cytology, CD-30 immunohistochemistry and flow cytometry. Cytology was benign with no evidence of BIA-ALCL and culture showed no growth. MRI (see figure 2) demonstrated a large volume fluid (yellow arrow) surrounding the left breast implant which appeared intact (red arrow). There was mild circumferential capsular enhancement but no solid/nodular components. There was no abnormal enhancement in the overlying breast parenchyma.

Given the patients symptoms and ongoing concerns regarding BIA-ALCL, surgical intervention was performed. Bilateral implant removal with left capsulectomy and right capsule biopsy was performed (see figure 3). Histology showed no evidence of BIA-ALCL. The results of all investigations were discussed at a multi-disciplinary meeting with Radiology, Breast and Plastic Surgery, Pathology, Medical Oncology and Radiation Oncology. The final diagnosis was implant rupture with peri-implant effusion.

Discussion

The pathogenesis of BIA-ALCL is unknown but it is thought to relate to chronic inflammation leading to malignant transformation of T-lymphocytes that are ALK negative and CD-30 positive. It is usually a localised disease, typically presenting as a large spontaneous peri-implant fluid collection which occurs at least one year, but on average 8-10 years, after placement of a textured implant. 8-12% of cases have an associated mass and 4-12% have associated axillary lymphadenopathy.

Ultrasound is the main diagnostic tool for diagnosing BIA-ALCL with a peri-implant effusion being the most common sonographic finding. A thickened irregular capsule can sometimes be demonstrated in addition to a solid or mixed solid/cystic mass.

This case demonstrates the challenges associated with diagnosing potential BIA-ALCL and how closely it can imitate other processes (e.g. implant rupture). Breast implant rupture occurs with increasing age of the implant but can also be caused by trauma (most often road traffic accidents) or be iatrogenic[6]. The definitive treatment for effusion only subtype BIA-ALCL is implant removal and capsulectomy, a surgical procedure not without its own complications and morbidity. Implant rupture alone does not necessitate removal. In this

case, given the woman's symptoms of swelling and associated discomfort, removal of the implant resolved this, while also ruling out BIA-ALCL.

Given that BIA-ALCL is rare, the epidemiological data to date is limited, it is thought to be a binary phenomenon; either being effusion only or an invading tumour[4]. TNM (Tumour, node, metastasis) is the classification system used and BIA-ALCL is considered a lymphoma at all stages[5]. Prognosis is good following implant removal and capsulectomy. More advanced disease may require systemic chemotherapy, radiation therapy or stem cell transplantation.

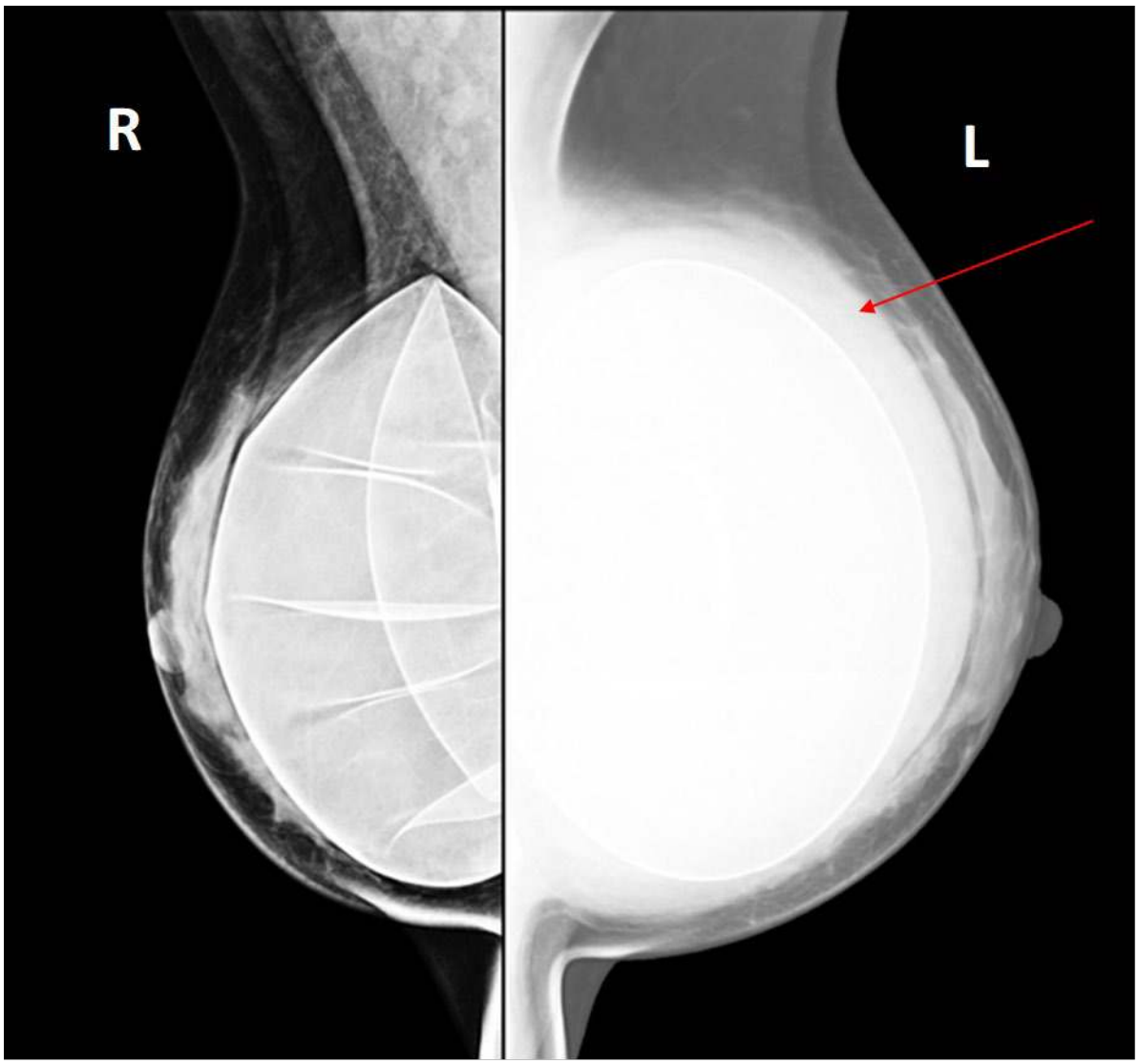

Figure 1-Bilateral Medial Lateral Oblique Mammogram

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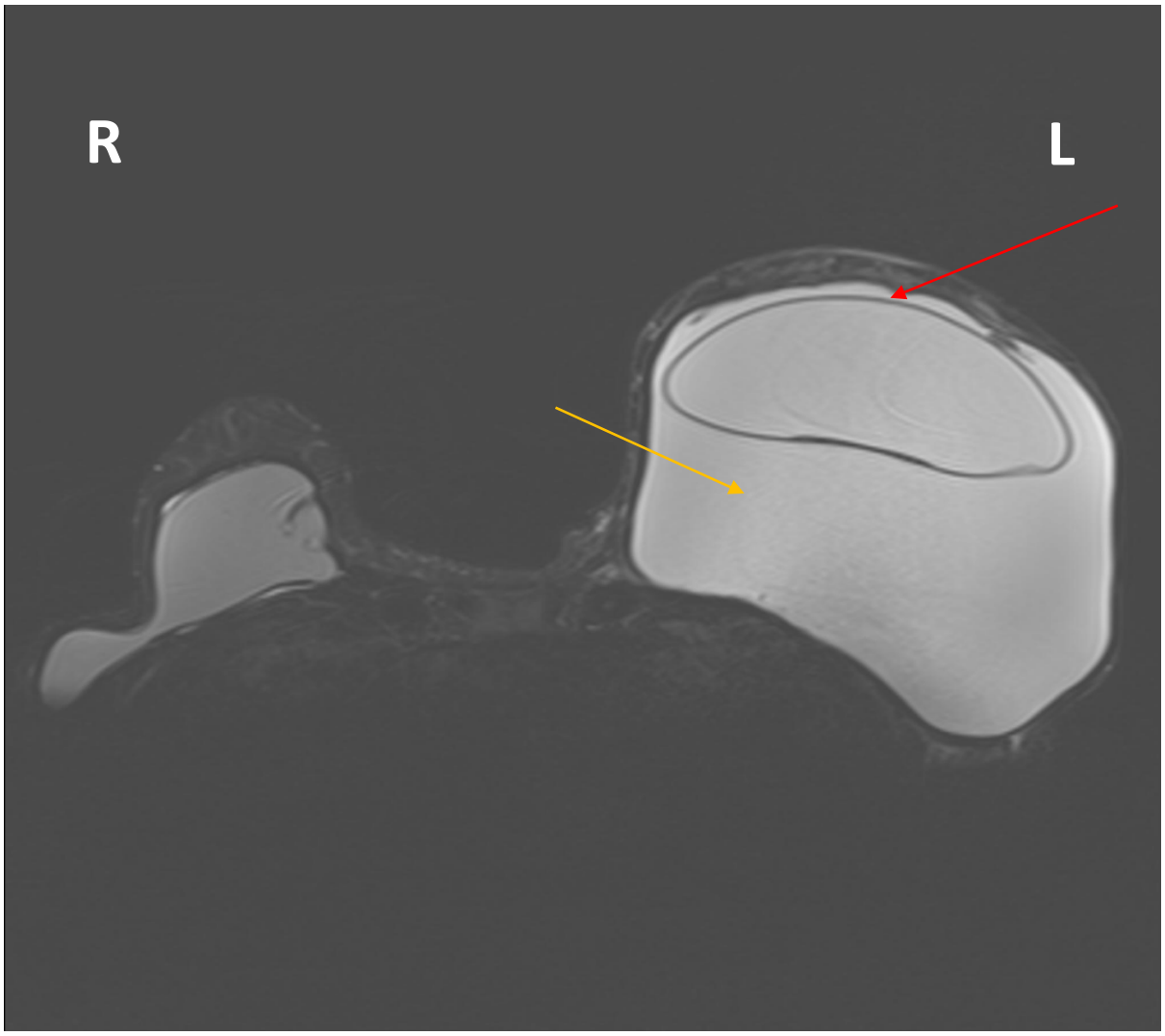

Figure 2 - Axial STIR Breast MRI

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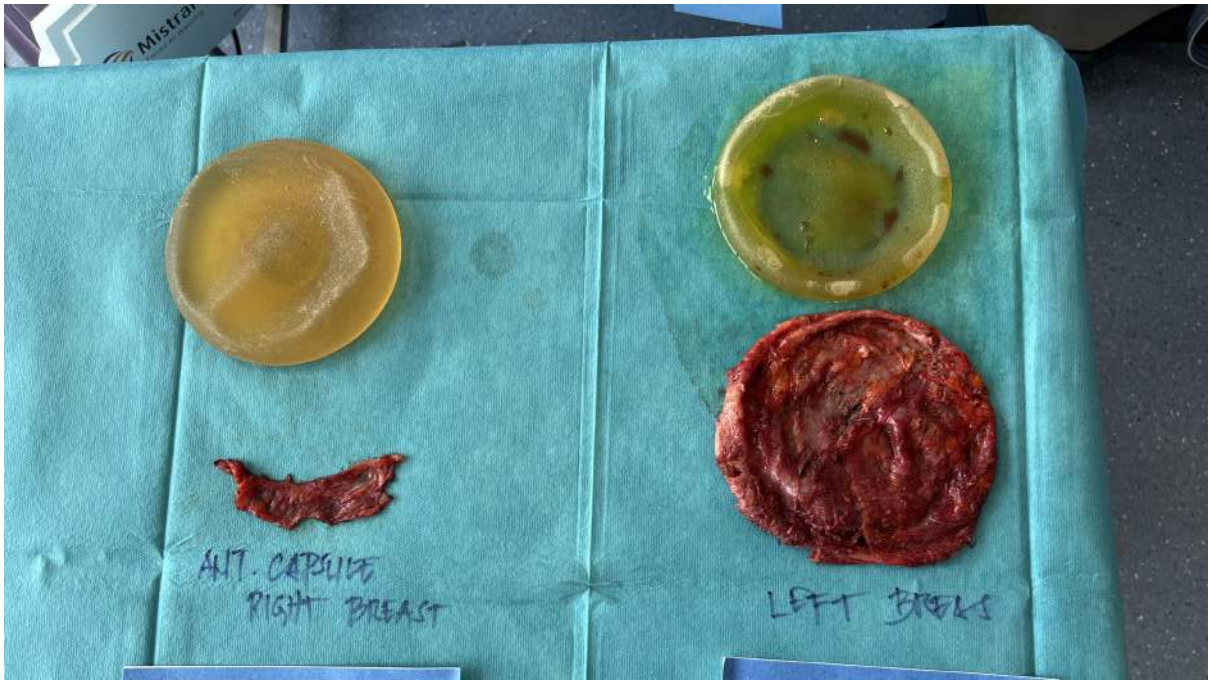

Figure 3 - Post Surgical Specimens

Declarations of Conflicts of Interest:

None declared.

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