Hindawi
Journal of Immunology Research
Volume 2018, Article ID 6784971, 9 pages
https://doi.org/10.1155/2018/6784971

Review Article

Silicone-Induced Granuloma of Breast Implant Capsule (SIGBIC): Histopathology and Radiological Correlation

Eduardo de Faria Castro Fleury,[1] **Gabriel Salum D'Alessandro**,[2] **and Sheila Cristina Lordelo Wludarski**[2]

[1]*Holy House School of Medicine, São Paulo, Brazil*
[2]*Brazilian Cancer Control Institute, Brazil*

Correspondence should be addressed to Eduardo de Faria Castro Fleury; edufleury@hotmail.com

Received 13 April 2018; Revised 29 June 2018; Accepted 14 July 2018; Published 20 September 2018

Academic Editor: Theresa Hautz

Currently, attention has been given to complications related to breast implants, especially due to the presence of anaplastic large cell lymphoma (ALCL) related to silicone implants. Many manuscripts attempt to associate silicone presence with clinical complaints reported by patients, while others try to demonstrate the mechanisms of silicone bleeding by permeability loss of breast implant surfaces. There also are reports of foreign body type reactions from implant fibrous capsule to silicone corpuscles. However, there seems to be no study that correlates the clinical, radiological, and histological correlations of these lesions. The objective of this review is to correlate radiological findings of silicone-induced granuloma of breast implant capsule (SIGBIC) from breast MRI (BMRI) scans and complementary findings of ultrasound (US) and positron emission tomography (PET) scan, and its histology originated from surgical breast implant capsulectomy. To make this correlation possible, we divided SIGBIC into three radiological findings: (1) intracapsular SIGBIC, (2) SIGBIC with extracapsular extension, and (3) mixed SIGBIC associated with seroma. Our experience demonstrates histological-radiological correlation in SIGBIC diagnosis. Knowledge of these findings may demonstrate its real importance in terms of public health and patient management. We believe that SIGBIC is currently underdiagnosed by lack of training, guidance, and management in our clinical practice.

1. Introduction

Many complications are reported inherent to breast silicone implants, such as late seroma, infections, rejections, intra- and extracapsular ruptures, contractures, and more recently, anaplastic large cell lymphoma (ALCL) [1]. However, the determining factors to develop these complications are still a black box. Surprisingly, one of the most frequent BMRI findings at our service related to silicone implant complications is a granuloma induced by free silicone granules (SIGBIC), present in about 27.1% of cases.

This manuscript is based on data analysis obtained from an observational prospective study for breast implant evaluation in patients referred to a breast magnetic resonance scan. The study was approved by our Institutional Ethics Research Committee with an informed consent term signed by all patients. Patients with suggestive SIGBIC BMRI findings were recalled for additional ultrasonography and PET scan. Final diagnosis was confirmed by percutaneous biopsy or by surgical capsulectomy.

Since February 2017, 2891 BMRI have been analyzed. Of these, 830 patients were referred for breast implant evaluation. 27.1% of the implants presented BMRI signs of SIGBIC, of which 12.7% had associated intracapsular seroma and 3.3% had signs of extracapsular involvement.

At first, the study was designed to investigate the incidence of breast implant-associated anaplastic large cell lymphoma (BIA-ALCL). Since its beginning, we have not found any case of BIA-ALCL. However, we diagnosed a type of intracapsular lesion not reported in previous studies, where the imaging and clinical findings were very similar to BIA-ALCL. When correlating these findings to histological results, a granuloma induced by free silicone particles in fibrous capsule was found. Many of these cases were not