



WHEN BREAST IMPLANTS GET ALIVE

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A 41-year-old female underwent aesthetic breast augmentation surgery 7 years ago. One week ago, began to present volumetric increase of the left breast. She also reported joint pain in this period successfully treated after non-hormonal anti-inflammatory therapy. From the clinical complaint, she was submitted to Breast Magnetic Resonance (BMRI) scan as the primary diagnostic investigation.

The BMRI scan showed irregular left breast implant associated with inside water droplets signs and vascularized masses at the post contrast series. She also filled the diagnostic criteria of Silicone Induced Granuloma of Breast Implant Capsule (SIGBIC). (Figure 1)

Recently we have described the BMRI findings of SIGBIC in a prospective observational study. The Magnetic Resonance criteria for the diagnosis of SIGBIC are quite restrictive, which make it very specific. Three signs were described and are pathognomonic of capsular disease:

- High signal on T2 weighted images;
- Black-drop signal;
- Intracapsular mass with late contrast enhancement.

When all these diagnostic criteria were present no false-positive results was reported.

In a recent study, we correlated SIGBIC image findings with clinical presentation and histology, where we divided the disease into 3 categories:

- SIGBIC intracapsular;
- SIGBIC with extracapsular extension;
- SIGBIC mixed with seroma.

Breast implants are inert prostheses structures used in the surgical practice with the purpose of performing oncologic or aesthetic surgeries. They are usually composed of an outer silicone shell with silicone gel inside. Some studies report episodes of gel bleeding from the interior of the implant to the intracapsular environment with no evident signs of implant rupture or host complications. In our study, we demonstrated a relationship between gel bleeding and the development of SIGBIC.

Water droplets is a breast MRI signal described when focus of water signal are dispersed inside the intact implant. Its clinical relevance is not yet established. Theoretically, it shows loss of the permeability integrity of the implant shell.

In this breast image section, we report the presence of contrast enhanced masses inside the breast implants indicating neo-vascularization. The patient had water droplets signal inside the implants and fulfilled the SIGBIC diagnostic criteria. It is presumed that, due implant surface permeability loss portrayed by the water droplets and SIGBIC presence, there should be infiltration of the granulation tissue inside the implant. For illustrative purposes, we demonstrated another 2 cases in different patients (Figures 2 and 3)

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3 It is worth highlighting the originality of these findings and the need for training
4 physicians involved in the breast lesions diagnosis to understand and report this
5 pathology. It is also worth emphasizing the importance of the late contrast series to
6 perform its diagnosis.
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Figure 1.

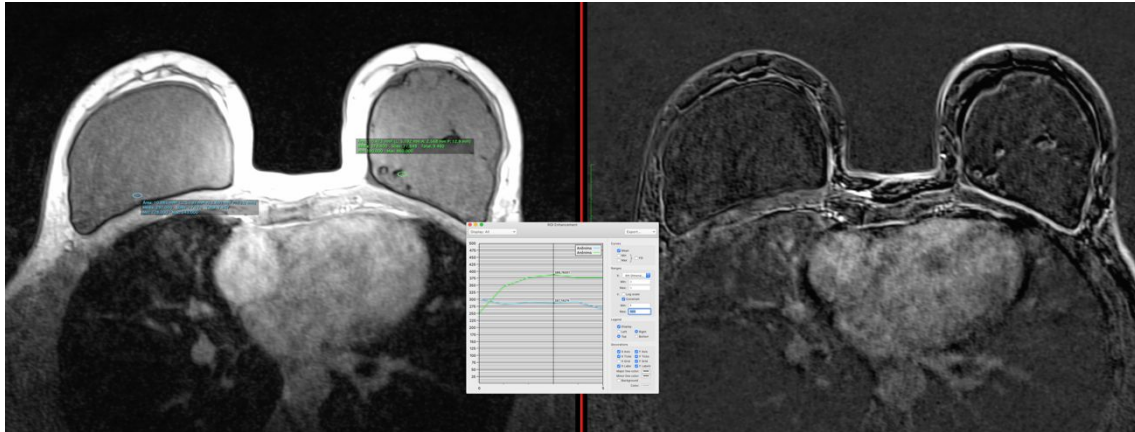


Figure 1. A 41-years-old female with breast implant for 11 years. Post-contrast series with (left) and without (right) subtraction showing contrast enhanced masses inside the left implant (green curve). Right implant is intact (blue curve).

Figure 2.

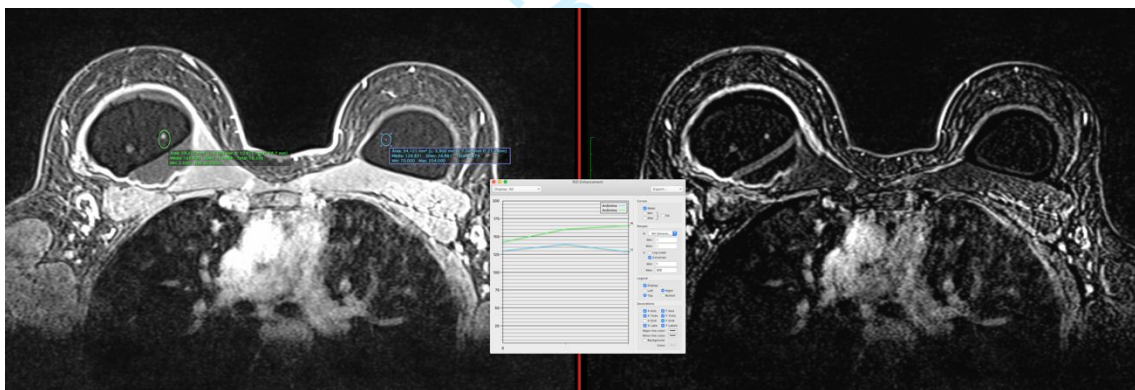


Figure 2. A 41-years-old female with breast implant for 7 years. Post-contrast series with (left) and without (right) subtraction showing contrast enhanced masses inside the right implant (green curve). Intracapsular seroma is associated. Left implant is intact (blue curve).

Figure 3.

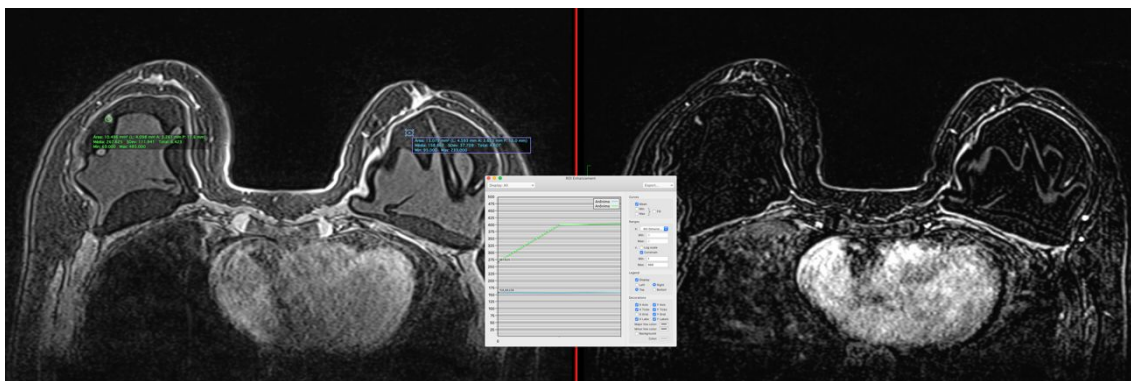


Figure 3. A 531 years-old female with breast double-lumen implant for 13 years. Post-contrast series with (left) and without (right) subtraction showing contrast enhanced masses inside the right implant (green curve). Left implant is intact (blue curve).

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