

## Breast implants late collections, ultrasound approach

**Poster No.:** C-0492  
**Congress:** ECR 2019  
**Type:** Educational Exhibit  
**Authors:** M. F. PIZZOLON, M. Uchida, E. Soto; Santiago de Chile/CL  
**Keywords:** Breast, Ultrasound, Diagnostic procedure, Puncture, Inflammation, Infection, Epidemiology  
**DOI:** 10.26044/ecr2019/C-0492

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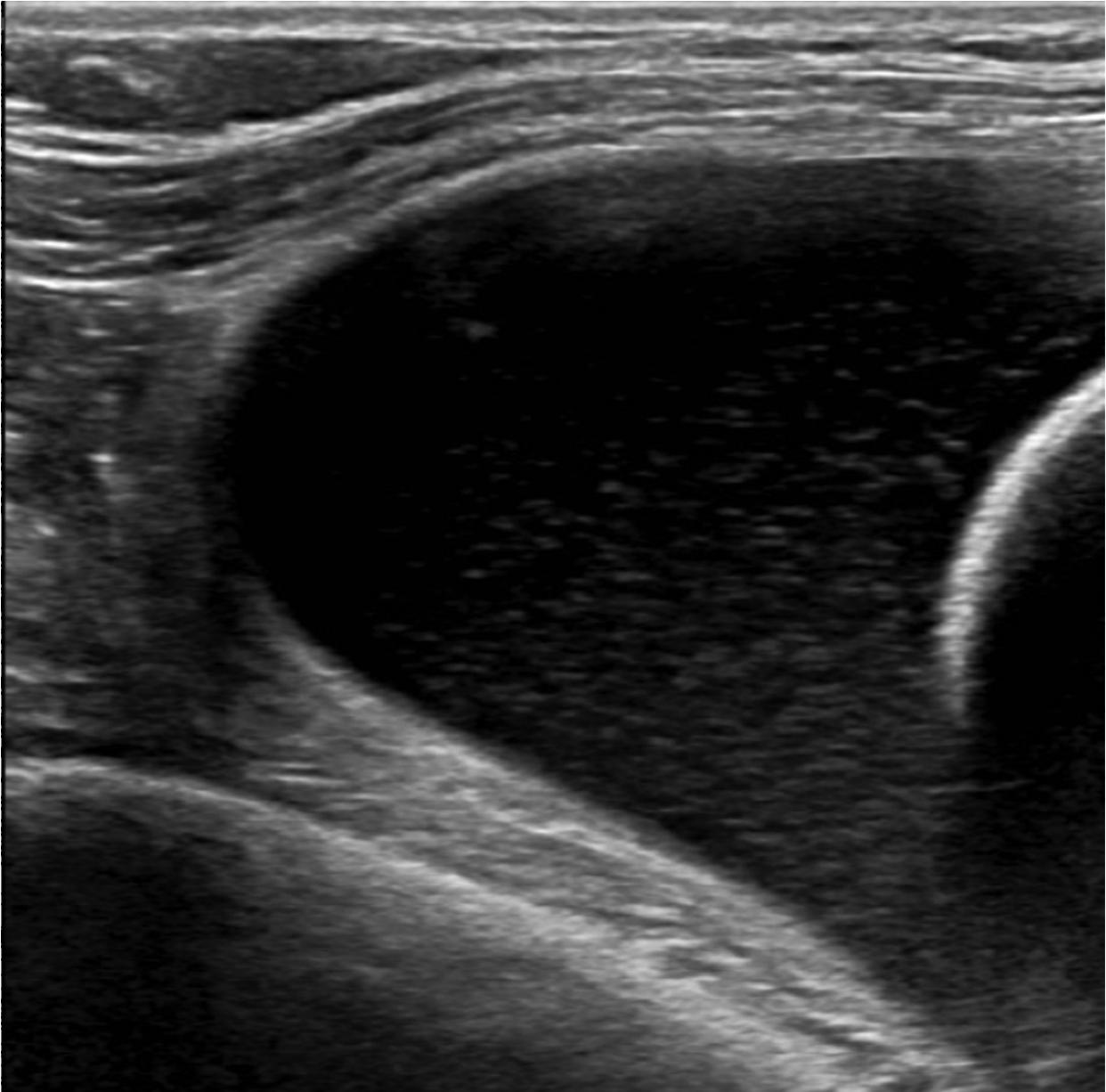
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## Learning objectives

Characterize the imaging features of peri-implant collections, enumerate their causes, time of onset and evolution.

**Images for this section:**



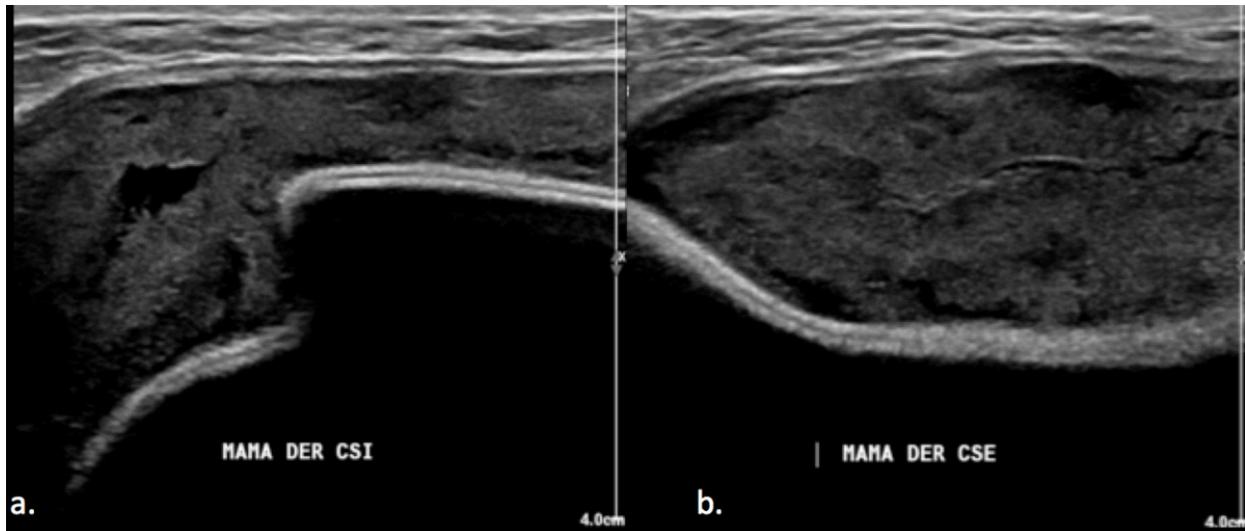
**Fig. 1:** 33 years old patient with breast augmentation surgery in 2007. Peri-implant turbid fluid collection. The pathology result was inflammatory unspecific changes.

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## Background

Breast augmentation using silicone implants is the most common cosmetic and reconstructive surgical procedure. Reported prevalence of breast implants complications are around 20%. They are classified by time of onset in acute and chronic, if they appear after a year from the date of surgery. Late complications include mainly capsular contracture and implant failure; late seromas, spontaneous hematoma and implant-associated anaplastic large cell lymphoma, are also described, but are very rare.

**Images for this section:**



**Fig. 2:** a, b. 38 years old patient with breast augmentation surgery 8 years before. Right peri-implant echogenic collection of 16 mm thick. Haematic material was obtained from the puncture. Final histology after implant replacement was pseudocapsula with chronic xantogranulomatous reaction.

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## Findings and procedure details

From January 2014 to September 2018, suspected cases of peri-implant collections in women who had undergone breast augmentation or reconstruction were evaluated, we reviewed the ultrasound performed, the results of fine needle aspiration (FNA) or Core biopsies (CB) and also their evolution.

Thirty-four patients had late peri-implant collections confirmed by ultrasound, thirty-one corresponded to plastic surgery and three were reconstructive. The average age of the patients was 43,7 years (25 to 72 years old).

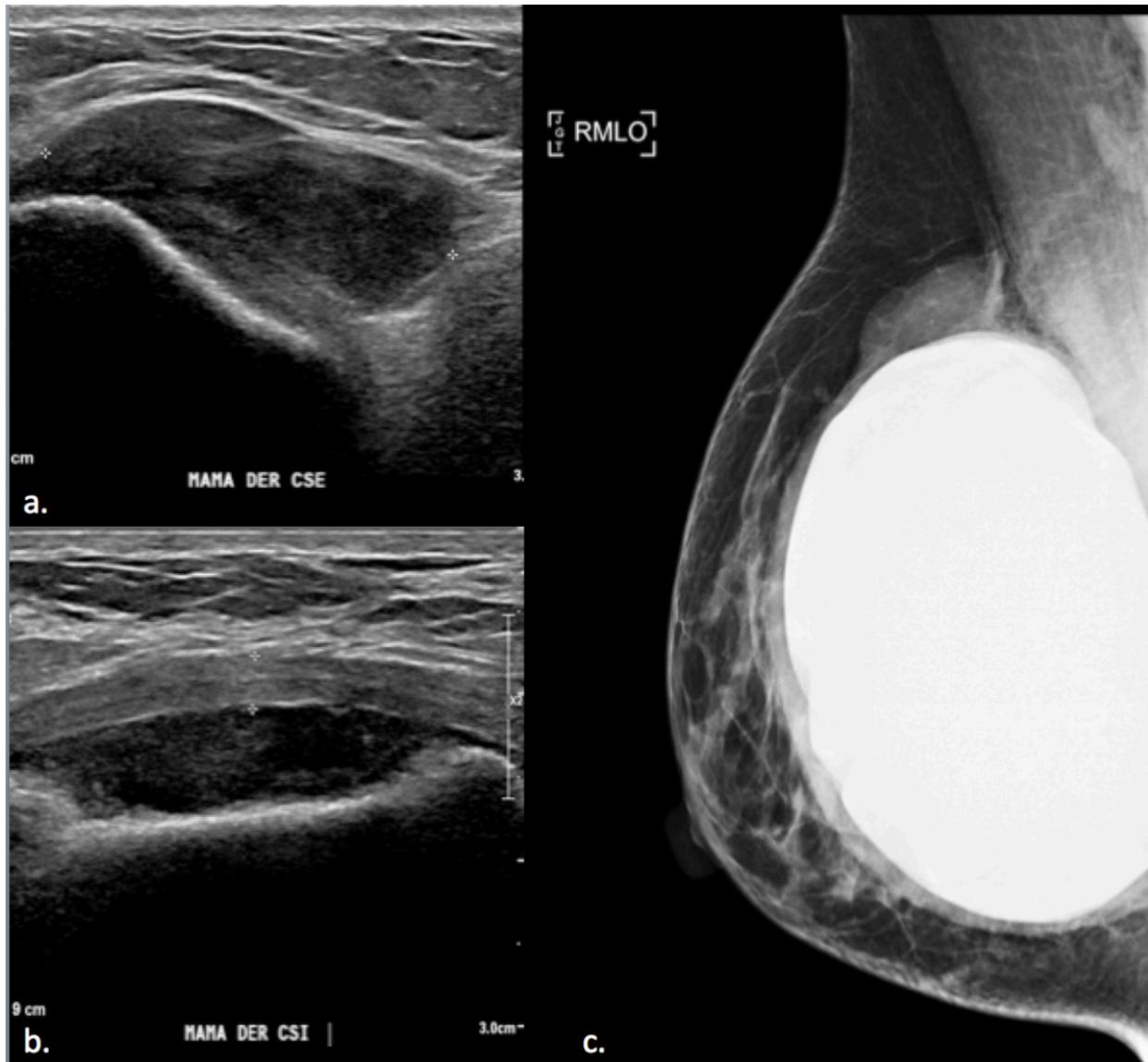
A total of forty-eight ultrasound-guided interventions were done, forty-six were FNA, and two CB (4,1%). In ten patients there were double aspirations (20,8%), and in three patients triple. There were no procedure complications.

The average age of these implants was 7 years (from 1 to 17 years old). All cases were unilateral. The drained volume range from 4-450 cc.

The ultrasound appearance was fluid in thirty-two cases (59% anechoic, 41% turbid), there were two cases of solid masses, vascularized in color Doppler.

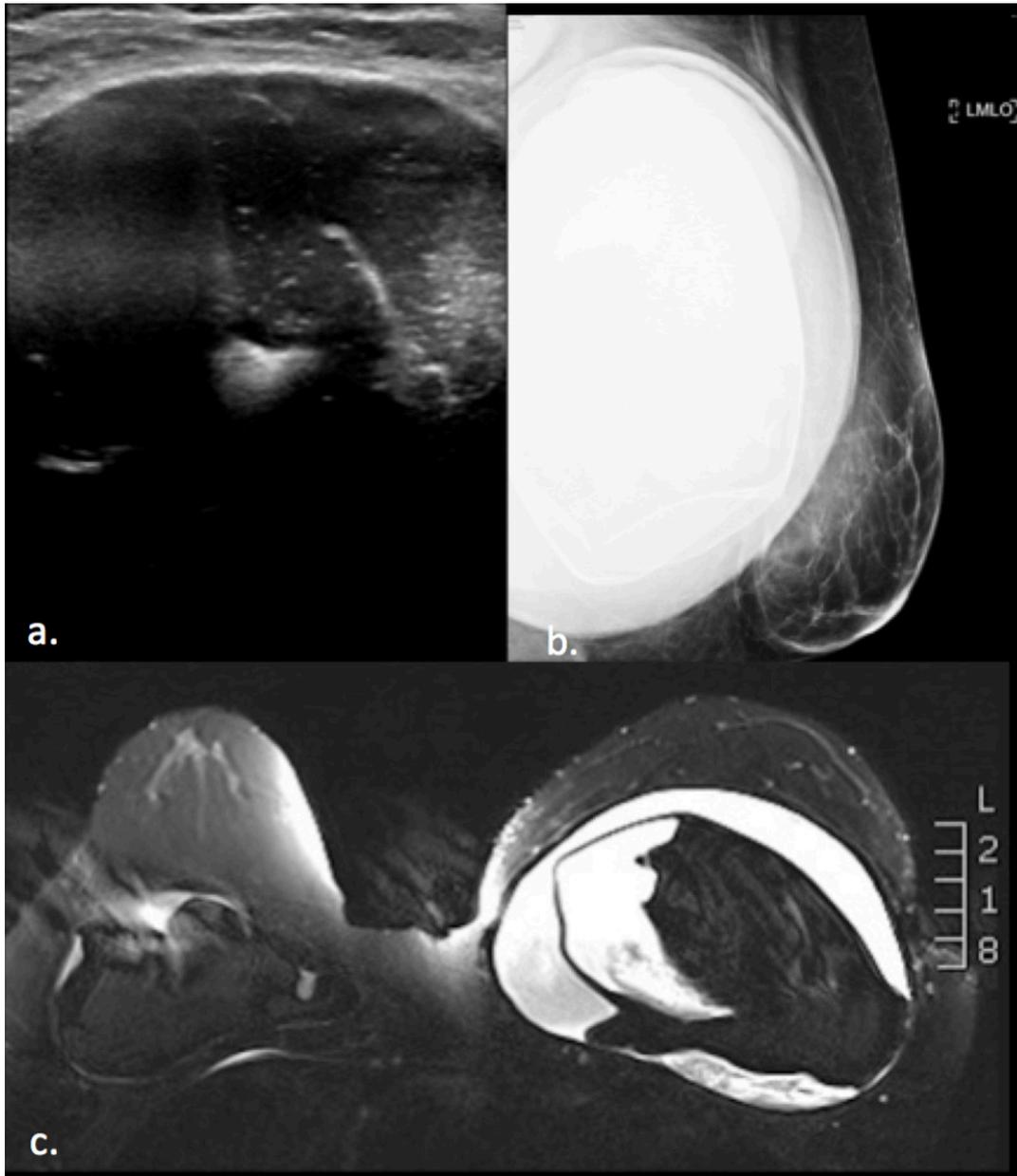
The histology and cytology results were negative to neoplastic cells in all cases, mostly non-specific inflammatory changes, one hematoma, two cases of infection (*Staphylococcus Epidermidis* in aesthetic surgery case and *Pseudomonas Aeruginosa* in a patient using breast expander), two capsulitis, the histologic studies corresponded to granulomatous unspecific reaction and pseudocapsula with inflammatory changes.

Images for this section:



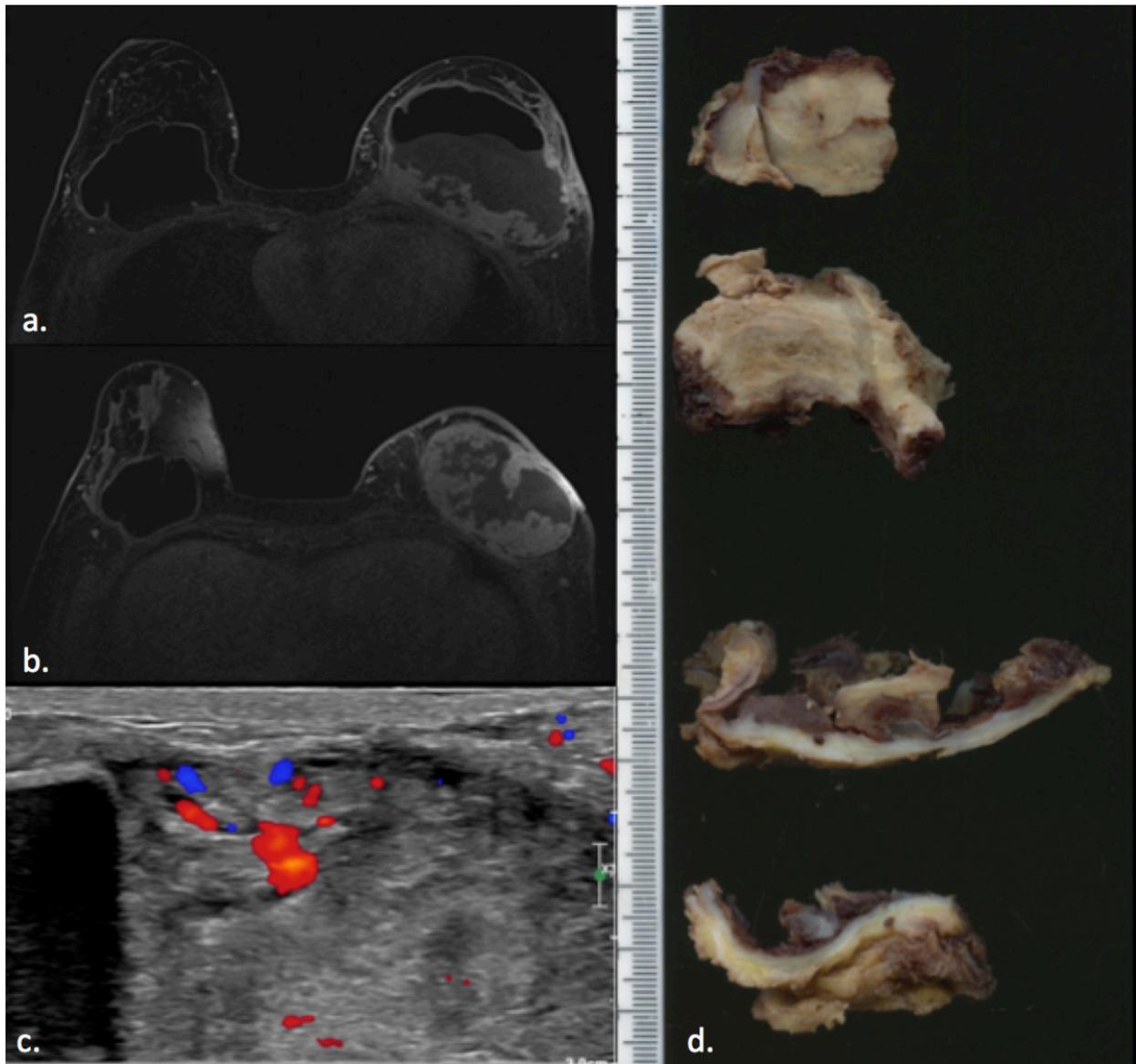
**Fig. 3:** 45 years old patient. Breast augmentation surgery in 2003. a, b. Ultrasound imaging shows peri-implant loculated turbid collection with thick walls. c. On mammography imaging, appears as a isodense mass in the upper pole of the implant. Core biopsy revealed pseudocapsula with chronic inflammatory changes and antique hematoma with signs of organization.

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**Fig. 4:** a. Ultrasound imaging shows collapse of the internal capsule and echogenic heterogeneous material, located inside the implant and surrounding it, the external capsule is unscratched. b. Mammography shows a isodense peri-implant halo, corresponding to fluid. c. MRI demonstrates intra-capsular rupture and peri-implant fluid collection.

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**Fig. 5:** 52 years old patient with breast augmentation surgery in 2005. a,b. RMI shows a solid hypercaptating mass inside the left intracapsular space, that compress and displace the implant. c. Ultrasound show a solid heterogeneous mass, vascularized in color Doppler. d. Macroscopy. Final histology was pseudocapsula with signs of organization and chronic inflammation.

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## Conclusion

Although peri-implant late complications are unfrequent, breast radiologists should be able to recognize their imagenologic appearance, differential diagnosis, possible causes and minimal invasive procedures, with diagnostic approaches.

# Personal information

## Contact details:

### **Dra. Flavia Pizzolon**

Breast Imaging Service, Department of Radiology, Clínica Alemana. Av. Manquehue Norte 1499, Vitacura, Santiago, Chile.

Email:mpizzolon@alemana.cl

### **Dra. Marcela Uchida**

Breast Imaging Service, Department or Radiology, Clínica Alemana. Av. Manquehue Norte 1499, Vitacura, Santiago, Chile

Email:muchida@alemana.cl

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