



UNIVERSITY of  
**ROCHESTER**  
MEDICAL CENTER

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**DEPARTMENT OF IMAGING SCIENCES**

**Imaging Sciences Interesting Cases**

**CASE 40**

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**CLINICAL PRESENTATION:** Patient is a 74-year-old woman who presented with shortness of breath.

**IMAGING FINDINGS:**



**Figure 1.** PA chest radiograph demonstrates lungs clear of acute disease, however there are two rounded densities which project over the breasts. A double right cardiac density is also seen, compatible with a hiatal hernia.



**Figure 2.** Lateral chest radiograph demonstrates the rounded masses to project over the anterior chest wall.



**Figure 3.** Axial CT image, bone windowing, shows calcifications surrounding breast implants. (Compare the density to bone.) There is also an increased AP diameter of the thorax, compatible with emphysema.

## **DIAGNOSIS: Calcified Breast Implants**

**DISCUSSION:** The body naturally forms a reactive fibrous capsule around a breast implant. Calcifications can form in this fibrous capsule. The calcifications are in the form of hydroxyapatite crystals within the fibrous capsule or on the surface of the capsule. They appear as plaque-like deposits near the surface of the implant. Normal implants appear semi-ovoid on lateral views. They become rounder and harder with capsule formation.

Timing and frequency of implant calcification vary with year of manufacturing. There have been multiple generations of silicone implants. It is expected that all first generation silicone gel implants which have Dacron-backing calcify. Second generation implant calcification is not usually seen until after a little more than a decade. Third, fourth, and fifth generation implants are now available, however data on their calcification rates is still sparse. Calcifications can also form around saline implants, though it has not been studied as extensively as for silicone implants.

In general, calcifications are more common when an implant has been in place for over a decade, has ruptured, or is subglandular in location rather than submuscular.

## **REFERENCES:**

1. Kopans DB. Breast Imaging, 3rd Ed., Lippincott Williams & Wilkins, 2007
2. Peters W, Smith D, Lugowski S, Pritzker K, Holmyard D. Calcification properties of saline-filled breast implants. *Plast Reconstr Surg.* 2001 Feb;107(2):356-63. [PubMed]
3. Prantl L, Schreml S, Fichtner-Feigl S, Pöppel N, Eisenmann-Klein M, Schwarze H, Füchtmeier B. Clinical and morphological conditions in capsular contracture formed around silicone breast implants. *Plast Reconstr Surg.* 2007 Jul;120(1):275-84. [PubMed]