



BREAST DIAGNOSIS CASE OF THE WEEK



Author: **Stergios Prapavesis** M.D. Radiologist

Ploutonos 27 Thessaloniki, 54655 Hellas (Greece)

Tel +0030 2310 425189 Fax +0030 2310 426610 E-Mail info@breast-ultrasound.com
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A 73-year old lady, the mother of an obstetrician gynecologist, was examined by mammography for the first time. Clinical examination was negative.

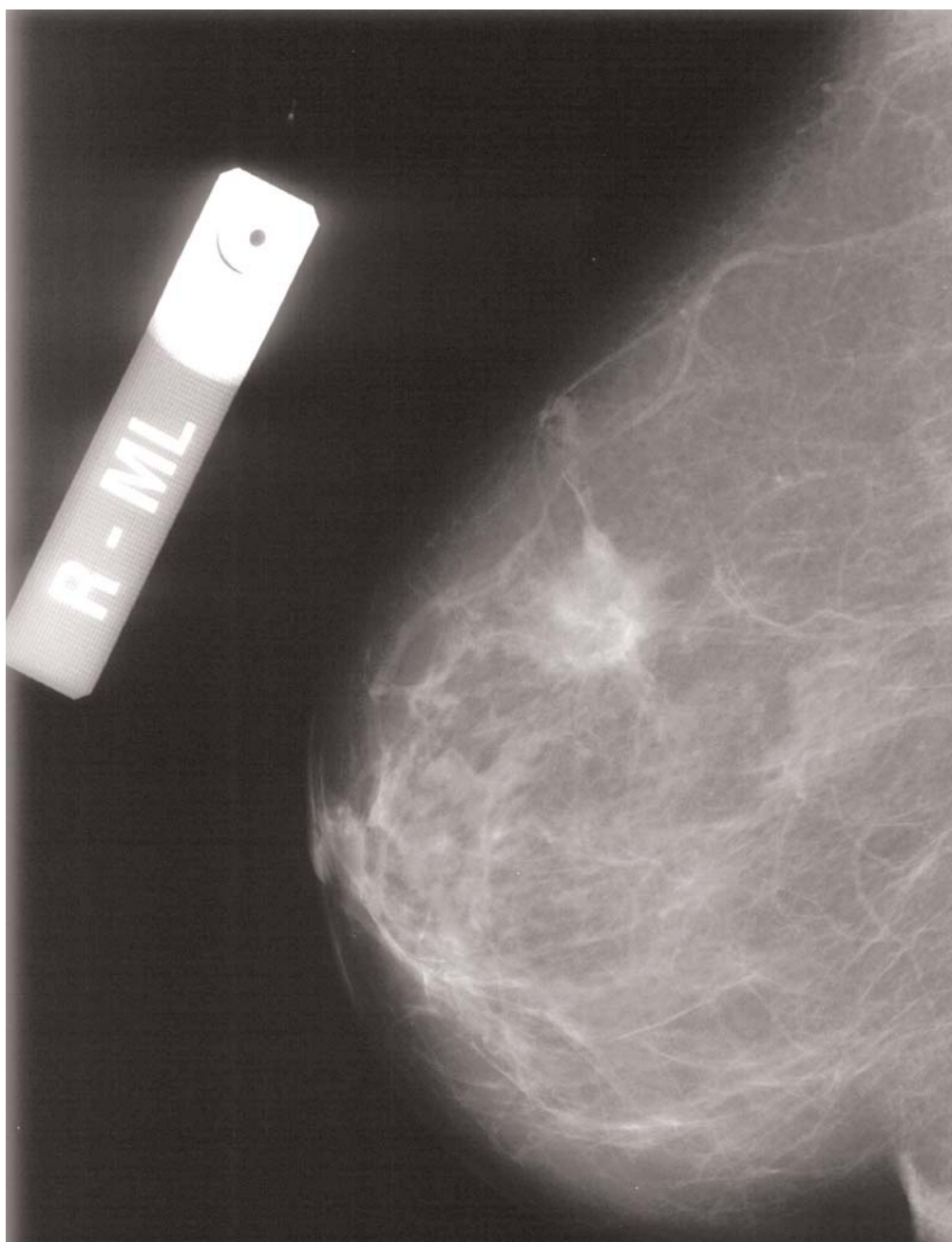


Image 1: A stellate lesion with peripheral spiculations is evident in the Right Mediolateral projection

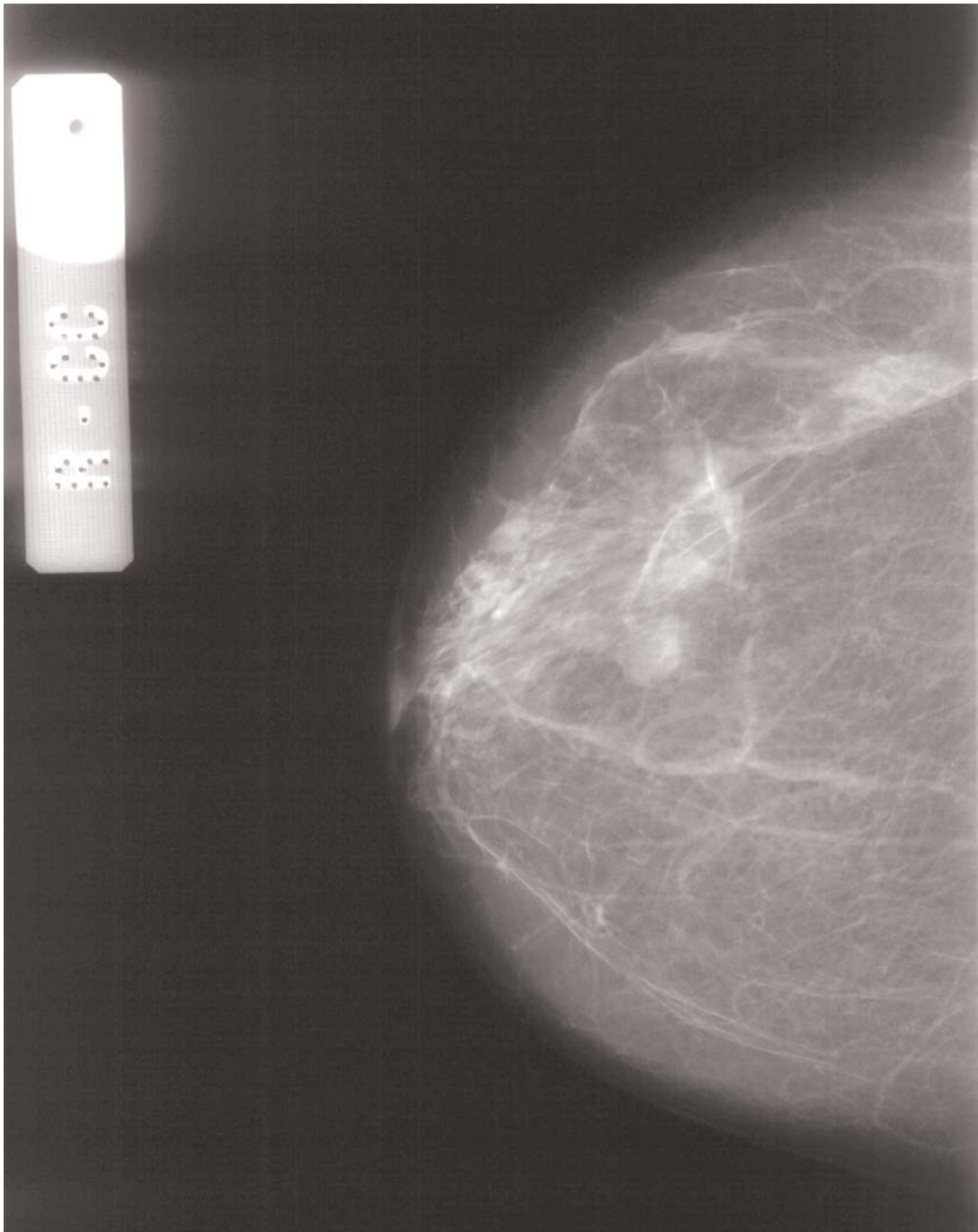


Image 2: The lesion is visible with difficulty in the Right Craniocaudal projection

The lesion was clearly visible in the mediolateral projection, however it was hardly visualized in the 90-degrees different craniocaudal projection. A magnification view revealed a low density center from which thin peripheral spicules radiated circumferentially. These spicules alternated with low density linear areas corresponding to trapped fat.

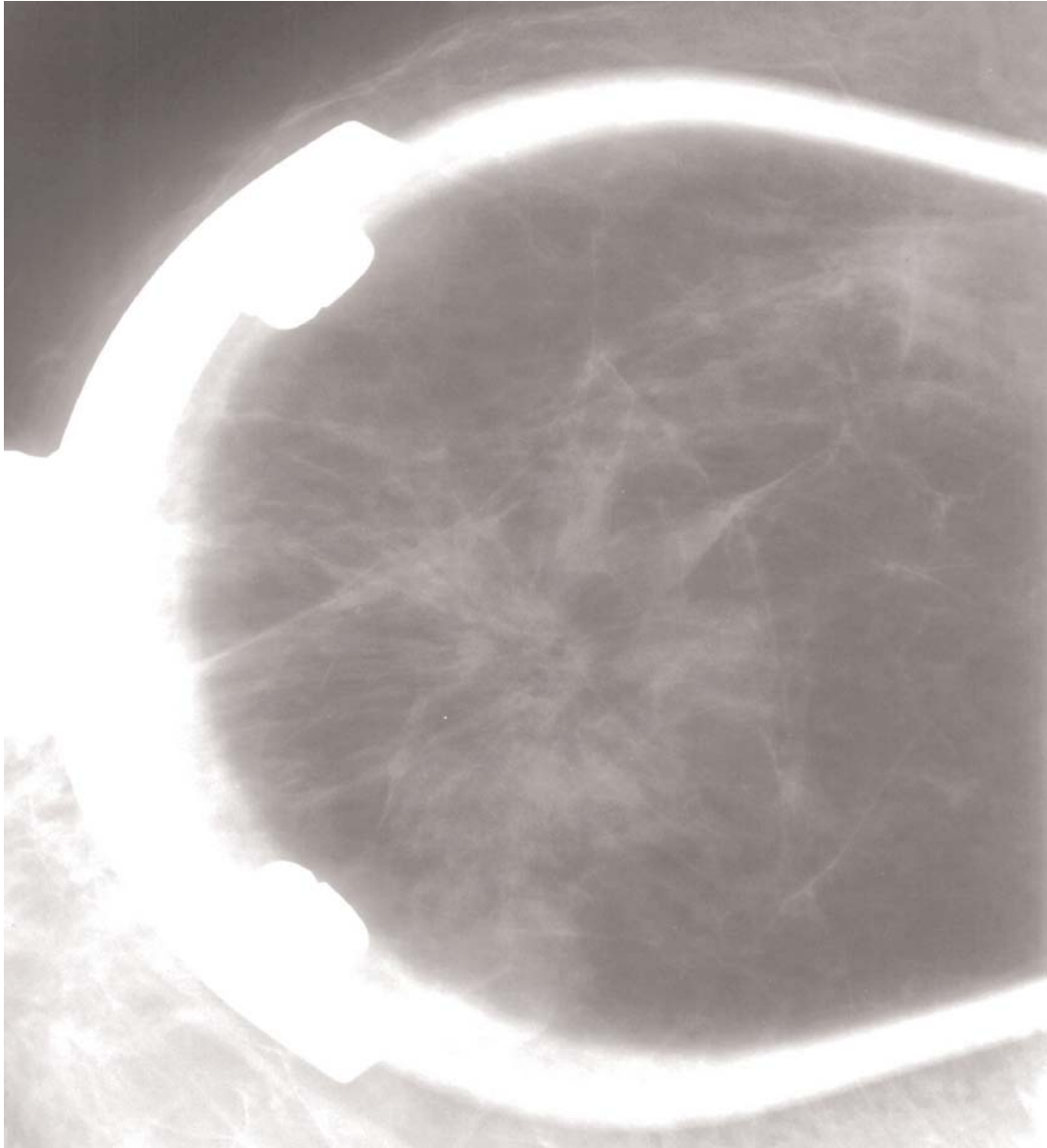


Image 3: Magnification view in the mediolateral projection. Note lack of a definite dense center of the lesion

There was no calcification evident in the mammographic views obtained. Ultrasonography was performed. However, the lesion proved difficult to visualize. Only in one plane was part of the lesion visualized as a subtle architectural distortion producing mild posterior acoustic shadowing

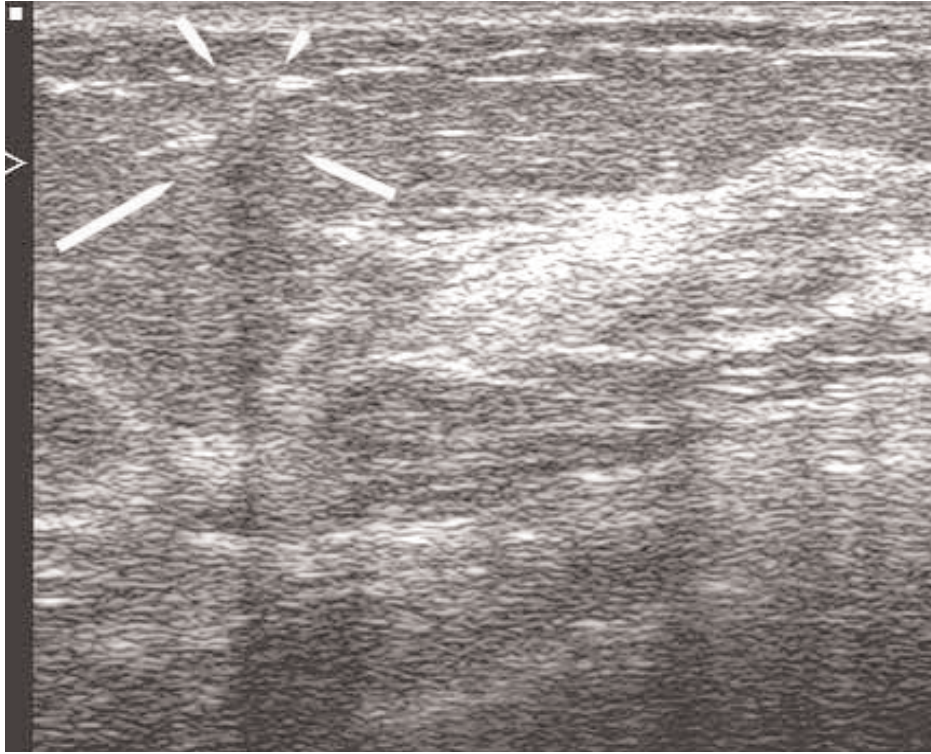


Image 4 : At Ultrasonography, only part of the lesion was visible as a slight architectural distortion with an element of posterior acoustic shadowing (arrows)

Suggested Diagnosis: Radial Scar

Suggested Management: Surgical Biopsy

The patient was operated on and the Final Diagnosis was **Radial Scar**.

Discussion: Radial Scar is a benign proliferative epithelial lesion that consists of a central fibrous core with fibrous projections radiating in the periphery.

The radial scar, on account of its stellate morphology may mimic malignancy and should be considered in the differential diagnosis of the stellate lesion in the breast

The radial scar may develop on the ground of preexisting proliferative epithelial changes and especially adenosis, hyperplasia and papilloma.¹ Tabar and Dean have described a typical appearance at Mammography, which should suggest the correct diagnosis.^{2,3}

Characteristic is the variability in the appearance of the lesion from one projection to the other, and the absence of a central dense mass corresponding in size to the size of the overall lesion. ie the radiating spicules are disproportionately long relative to the size of the center of the lesion

The presence of long thin spicules radiating from a relatively radiolucent core is typical. Between these spicules, low-density translucent spicules representing fat trapped in the lesion may predominate to give the lesion a "black star" appearance.

There is also a striking discordance between the mammographic and the clinical findings. There is no skin thickening or retraction and the palpable findings, if they exist at all are smaller and out of proportion to the ones expected from the size of the mammographic lesion.

Ultrasound will often allow us to localize the lesion with certainty. It is often the case that this lesion is depicted with certainty only in one Mammography projection. This difficulty arises from the fact that this lesion is usually disc-shaped and grows rather in one plane than in a spherical mass.

Accordingly Ultrasound may be of assistance to perform preoperative localization. During Ultrasonography this disc shape of the lesion may assist us diagnostically to suggest the correct diagnosis, because the lesion will also produce a variable sonographic appearance depending on the orientation of the ultrasound beam.

When we are scanning perpendicular to the plane the lesion is growing in, we will detect the lesion as an hypoechoic area with irregular, indistinct borders, producing posterior acoustic shadowing, an appearance similar to that of an infiltrating malignancy.

However, examining parallel to the plane of the lesion, the lesion may show little surface area to deflect ultrasound and we may have difficulty to image the lesion.

Beware: Tubular Carcinoma or Ductal Carcinoma in situ (DCIS) may coexist with radial scar and the distinction may not be possible with needle biopsy. In the case of a suspected radial scar surgical excision must always be recommended regardless of the benign diagnosis suggested.⁴

REF 1 Sewell C. Whitaker Pathology of Benign and malignant breast disorders Radiologic Clinics of North America Vol 53 No 6 Nov 1995

REF2 Tibor Tot, Laszlo Tabar, Peter B. Dean Practical Breast Pathology, 2002 Georg Thieme Verlag

REF3 Tabar L, Dean PB .Teaching Atlas of Mammography Stuttgart,Germany: Thieme -Verlag,1985:88-90

REF4 Prapavesis P. Fornage B. Palko A. Weismann C. Zoumpoulis P. et al Breast US and US-guided interventional techniques A multimedia teaching file Published Thessaloniki 2002 www.breast-ultrasound.com

