CASE REPORT

A 50-year-old female was referred to the X-ray department with a complaints of slowly growing mass in the lower outer quadrant of her left breast and a sudden strong pain with change in the breast size and shape. Her past medical history reported an augmentation mammoplasty silicone breast implant 15 years ago. Physical examination showed a localized swelling in the lower outer quadrant of the left breast, with a presence of palpable mass given a high significant of breast implant rupture. Rest of physical examination were normal. A non-contrast magnetic resonance imaging (MRI) revealed a left side breast implant rupture (Figure 1).

DISCUSSION

Breast implants composed of silicone gel enveloped in a silicone rubber elastomer were introduced in 1963. The frequency of rupture of silicone-gel-filled breast prostheses is unknown, as are the associated health effects [1]. Brown SL et al. reported that on MRI, the prevalence of silicone gel implant rupture in a population-based study of 344 women in Birmingham, Alabama, was 55% and that 22% of ruptured implants showed extracapsular spread of silicon [2]. In 2003, Lisbet et al. reported 33 definite ruptures (10%) and 23 possible ruptures (7%) during a 2-year period. The overall rupture incidence rate for definite ruptures was 5.3 ruptures/100 implants per year [3].

Rupture of silicone breast implants is caused by stress on the implant at the time of surgical placement, trauma, defects in manufacture, long-term repetitive

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Figure 1: A T2 weighted sagittal MRI image of left breast. Silicone can be seen extruding from the implant inferiorly.
stresses such as exercise, mammographic compression, and long-term detonation of the implant [4].

The risk of implant rupture increases with implant age. A minimum of 15% of modern implants can be expected to rupture between the third and tenth year after implantation [3].

The diagnosis is difficult to make on the basis of clinical findings or findings on film-screen mammograms. Hence, the value of other imaging techniques such as sonography, computerized tomography (CT) scan, and MRI needs to be studied [4]. The performance of MRI is superior to that of mammography, sonography and CT scan in depicting the rupture [5].

MRI is the most accurate imaging examination for the evaluation of silicone gel breast implant SGBI rupture [6]. High-resolution MRI is needed to depict internal structure of implants accurately. High resolution can best be achieved through use of a dual shoulder coil or a dedicated breast coil. MRI done in a body coil does not provide sufficiently detailed information [1].

CONCLUSION

Regardless of the high costs of MRI scans and possible unavailability, MRI is the best radiological method in detecting breast implant rupture.

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Author Contributions

Amin Ahmed Elzaki – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

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Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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