Spectrum of Breast Asymmetries: A Pictorial Essay

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Introduction

The breasts have fairly symmetrical parenchyma pattern with similar densities on mammography. However, asymmetric breast findings are relatively common1. There are some confusion about the terminology for describing asymmetric breast findings. To address this issue, the American College of Radiology BI-RADS lexicon included few terms for asymmetric breast findings in the latest fourth edition of BI-RADS2. Few changes has been made to improve its clinical usage for reporting. These are as follows:

- Global asymmetry replacing 'asymmetric breast tissue'
- Asymmetry replacing 'differences seen in one projection'
- Focal asymmetry replacing asymmetric density
- Developing asymmetry - not included in this lexicon, however due its significance, has been suggested as a separate category of asymmetry.
- Architectural distortion - defined as another type of breast asymmetry in the previous BI-RADS

Aim

To illustrate the spectrum of breast asymmetries according to fourth edition of BI-RADS.

Method

- We collected random cases of asymmetric breast on mammogram.
- The types of asymmetry was classified according to the fourth edition of BI-RADS.
- Selected mammogram and ultrasound images were shown to illustrate the spectrum of breast asymmetry.
- Final diagnoses of the cases were given.

Asymmetry

- Represents an area of tissue with fibroglandular density that is more extensive in one breast on only one view.
- Summation shadow accounts for approximately 80% of cases.
- True lesions can be seen on only one view if they are obscured by dense breast parenchyma or are located outside the field of view.

Architectural distortion

- A focal area of breast tissue that appears distorted with no definite mass visible3.
- In the absence of appropriate history of trauma or surgery this is suspicious for malignancy and biopsy is indicated.
- Another benign cause is scar which tends to improve or remain unchanged over time2.

Global asymmetry

- Asymmetry seen on two views that involves a greater volume of breast tissue (at least a quadrant) without any associated mass, suspicious calcifications or architectural distortion2.
- Reported in about 3% of mammographic examination1.
- Usually due to normal variation or hormonal influence, but may be significant if it corresponds to a palpable abnormality.

Focal asymmetry

- Asymmetry with similar shape on two views but does not fit the criteria of a mass4.
- Occupies a volume less than one quadrant of the breast.
- The frequency of this findings at screening mammography is less than 1%1.

Developing asymmetry

- Asymmetry developing on subsequent mammograms.
- Usual due to normal variation or hormonal influence.
- Occasionally, architectural distortion and focal asymmetry can develop into cancer.

Conclusion

Most of the asymmetric breast seen on mammograms are due to superimposition of normal tissue or an island of fibroglandular tissue. However, asymmetric breast tissue in conjunction with other secondary signs of malignancy or in association with a palpable lesion should increase our level of suspicion. In these cases, additional imaging and intervention should be applied in a logical work flow.

References

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