

Importance of mammographic interpretation to enable Band 6 & 7 Radiographers to deliver a high quality one stop service

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Aim

At the breast imaging department at St. James's Hospital, Leeds we undertake a variety of breast imaging of patients referred through our symptomatic clinics as well as post-surgical follow up mammograms for breast cancer patients and family history surveillance mammograms.

Within our unit assistant practitioners and radiographers provide informal written comments about their mammography images which are then given to the radiologist or consultant radiographers for reporting. We also have sonographers who independently review the mammography images prior to undertaking an ultrasound examination who do not have formal mammography interpretation training. Although over the years this has helped streamline patient flow through our clinics lately we have seen with the

more inexperienced radiographers/sonographers a lack of confidence regarding mammography interpretation causing some delay in the patient pathway.

To improve the quality, delivery and provision of care to our breast patients we needed to keep the staff engaged whilst also developing and supporting them through the demanding role in breast imaging. With limited financial resources, reduction in the availability of accredited courses and current staff shortages, we developed an in house mammographic module on image interpretation geared for Band 6 and 7 radiographers whose role involves delivering mammographic imaging, breast ultrasound as well as training and supporting junior members of the team.

Method

A training package was developed comprising of a training manual, report check list, report form, practical sessions and practical assessment.

Training manual

A training manual was devised to include terminology and appearances; Masses, asymmetrical densities, stromal deformity, skin changes, calcifications (macro/micro) and nodes.

Mass

Density	High Medium Low
Margins	Spiculated Irregular Lobulated Smooth Ill defined Well define-well circumscribed
Focus	Unifocal, multifocal, Multicentric
Size	Size of mass in mm - or extent of abnormality
Site of Mass	Axillary tail Centrally-deep to nipple Inner half/outer half/lower half/upper half Lower inner quadrant- LIQ Lower outer quadrant- LOQ Upper inner quadrant- UIQ Upper outer quadrant- UOQ Pre pectoral region
Halo	Corona Thin Not present

Microcalcifications

Distribution	Cluster Diffuse Wide spread-scattered Segmental
Appearance	Benign Casting Linear Punctate Pleomorphic (variable) Branching Other

Circumscribed lesions

Density	Radiolucent-eg. Oil cyst lipoma Mixed eg. Hamartoma fat necrosis Radiopaque-Low density-cyst High density-Carcinoma
Margins	Well define-well circumscribed Ill defined
Shape	Circular Oval Lobulated
Number	Solitary Multiple Bilateral
Orientation	Parallel to trabecular structure eg. Cysts Random position across trabecular pattern eg. Carcinoma

Reporting check list

Criteria to be taken into account when formulating a report;

1. Clinical history

- Patients age
- Symptoms
- Past history - surgery and treatment

2. Breast density - exclusion value

- Low
- Low to moderate mixed
- High
- Moderate
- Moderate to high

3. Asymmetry

- View back to back and assess differences
- View with previous examinations and assess differences

4. Outcome decision

- Normal
- Abnormal
- Indeterminate
- R1 - R5 classification

5. Report

- Unambiguous
- Individualistic but adheres to departmental protocol

6. Recommendations

- Further referral
- Other investigations
- Supplementary views
- Review/acquire images from elsewhere
- Review images with peers/colleagues.

Radiographer reporting sheet

This was a modification of the existing comments sheet in use in our department for mammography and ultrasound.

Reporting Form:

CRIS number: _____

Clinical history/indication _____

REPORT:

Comparison with previous: _____

Breast density: _____

Description of findings (shape, margin, density, size, position in breast): _____

Overall assessment: _____

Recommendation _____

Right Breast		Left Breast	
Normal	R1	Normal	R1
Benign	R2	Benign	R2
Indeterminate	R3	Indeterminate	R3
Suspicious	R4	Suspicious	R4
Malignant	R5	Malignant	R5

Practical sessions

The schedule for the practical component of the training was delivered by:

- One session of self-learning:- Report reading - trainees to appreciate the various reporting styles.
- E-learning Image Interpretation 111. Breast Imaging: Introduction.
- 1 reporting session with a Consultant Radiographer.
- E-learning Image Interpretation 112: Breast Imaging: Pathology.
- 3 reporting sessions with a Consultant Radiographer. One of these to be a symptomatic breast clinic reporting session.
- 4 cold reporting sessions- trainees working alone. All provisional reports produced to be discussed with a Consultant Radiographer.
- 2 session shadowing a Consultant Radiographer in clinic.

After these elements were completed 150 sets of mammograms were to be reported over a 6 months period. After each 20 cases the reporting forms were given to the consultant radiographers for assessment so that continuous feedback about the trainees' progress could be given. If it was felt that the standards were not met a further 50 sets of mammograms were to be reported.

Participants

Two radiographers undertook the training, one band 6 mammographer and one band 7 mammographer/breast sonographer, both with over 5 years' experience working within the breast imaging department.

Assessment

The practical assessment consisted of 20 cases who had presented to the symptomatic clinic or as part of our surveillance programs throughout the year. Clinical history was provided for each patient. Current images were available for viewing (after ID removed) however no reference was made to previous imaging and previous imaging was not available for comparison. Trainees were required to note appearances, a free text report written with conclusion and recommendations. The assessment was evaluated independently by 2 consultant radiographers with consensus meeting for evaluation of results.

The cases ranged from having normal to overtly malignant features. Several subtle pathologies were included together with sub optimal imaging that hid a malignancy.

Evaluation of the practical assessment

- All malignant pathologies correctly identified by both trainees.
- Most of the benign pathologies were overcalled.
- The case with sub optimal imaging was not recalled by either trainee.
- Some overcalling of the recommendations section by both trainees.

Both trainees were successful in their assessment. From these results we felt that the over calling was due in part to not having previous imaging available where possible, on review of the course this is likely to change for the next cohort of trainees.

Evaluation questionnaire

Both participants completed an evaluation questionnaire six months post completion of assessment.

Completely satisfied

Can now confidently offer advice to colleagues

Session to look at calcifications would have been useful

Increased confidence

Very informative

Practical assessment was challenging

Will now discuss the need for additional views

Given me confidence in my own knowledge and decision making

Difficult with no previous imaging for comparison at the assessment

Now viewing mammograms more methodically

Impact

Both trainees had excellent results. This gave the trainees greater confidence in their work. They enjoyed the training and appreciated that they had been given the opportunity to do so.

They have a greater awareness of the importance of good technical quality imaging and engaged better with the reporting consultant radiographers/radiologists to ensure that mammographic abnormalities (real and composite) were appropriately worked up.

As radiographers we continuously strive for improved patient care therefore this course is to be provided for all the band 6 and 7 radiographers who do not already have formal mammography interpretation course.

On completion, certificates have been issued as evidence of CPD.