

Evaluation of the role of the breast radiologist in the management of patients with a B1 histopathological core biopsy outcome

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B1 = normal tissue (which may imply inadequate sample)

- ▶ UK Royal College of Pathology 2016 Reporting Guidelines (1):
 - ▶ This indicates a core of normal tissue including normal breast ducts and lobules or mature adipose tissue or stroma only
 - ▶ benign lesions such as hamartomas and lipomas
 - ▶ cores with B1 diagnoses may contain microcalcification (within involutinal lobules)
 - ▶ minor degree of fibrocystic change is usually best categorised as B1
 - ▶ lactational change should be categorized as B1
 - ▶ it is the role of the multidisciplinary meeting (MDM) to judge whether the core biopsy is adequate.

Aim:

Assess the pathway of patients with a B1 histopathological core biopsy outcome and provide meaningful suggestions to ensure appropriate management of these patients.

Methodology & Patient cohort :

- Retrospective analysis of US-guided biopsies performed between January and December in 2019 at Guy's & St Thomas' Hospital NHS Foundation Trust
- 1442 Breast and Axilla core biopsies performed
- **134 patients with B1 outcome = 9.3%**
- 132 ♀, 2 ♂
- Age range: 20-92
- 91 (68%) cases biopsy of symptomatic area
- 43 (32%) cases, incidental areas (2nd look MRI; mammogram/US findings)



Routine department policy is to perform 14g cores.

- ▶ **The number of cores taken:** 2 cores: 101/134 cases, 1 core: 15/134 cases, Not recorded: 18/134 cases

Core biopsy needle imaged in 2 planes:

- ▶ Both longitudinal and axial plane: 95/134 cases
- ▶ Single plane only: 26/134 cases
- ▶ No imaging of biopsy plane: 13/134 cases

Total 134 Cases as B1

50 cases (37%) re-biopsied

- ▶ 18 (13%) cases remained B1
- ▶ 27 cases upgraded to B2
- ▶ 1 case B3 ⇒ Fibroepithelial lesion, ?phyllodes. At surgical excision: fibroadenoma
- ▶ 4 cases (3%) were upgraded to malignancy
 - ▶ 2 cases were B5a (ductal carcinoma in situ)
 - ▶ 2 cases were B5b (invasive malignancy)

84 Cases had no repeat biopsy

- ▶ 26 cases US repeated
- ▶ 58 cases, B1 outcome was accepted
 - ▶ 21 cases "B1 acceptable" was prospectively suggested
 - ▶ 37 cases, B1 outcome accepted following retrospective review of the operating radiologist. (None of these cases to date have been diagnosed with malignancy since their scan).

4 Malignant Cases

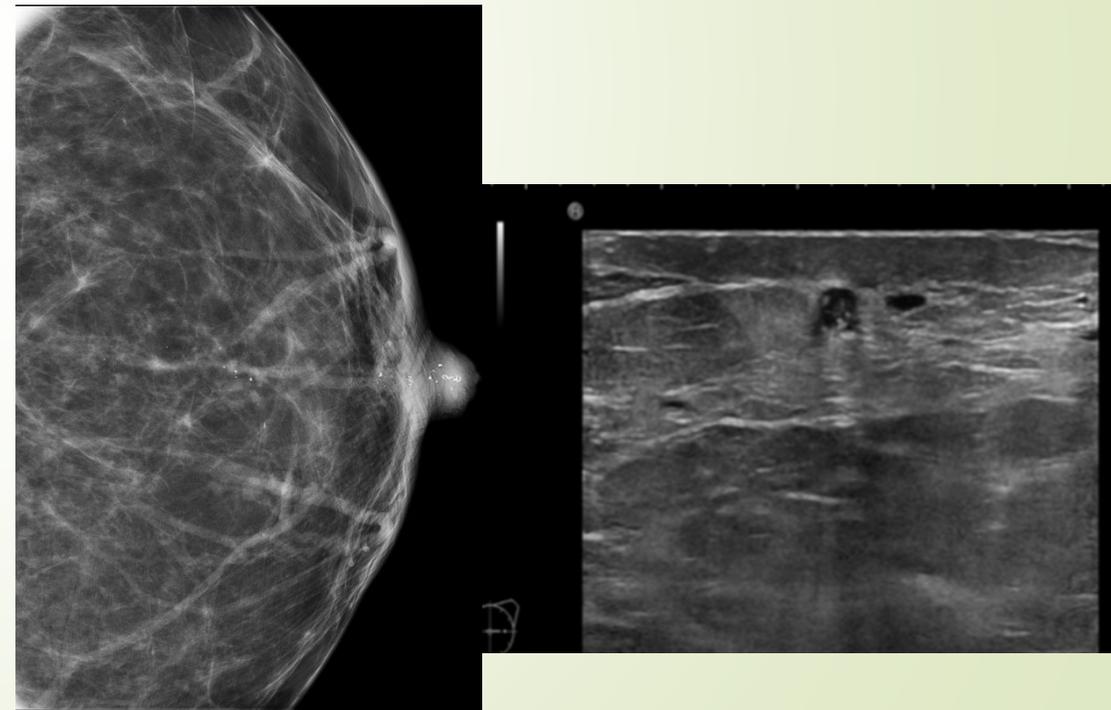
Case I

- ▶ 89 ♀, Clinically malignant mass (E5)
- ▶ U4 intracystic mass. Initial biopsy at different local hospital = B4
- ▶ Guy's Hospital biopsy = B1 (clot only)
- ▶ 2 cores taken. No images of biopsy needle.
- ▶ Subsequent biopsy B5a, Encysted papillary carcinoma of intermediate grade.



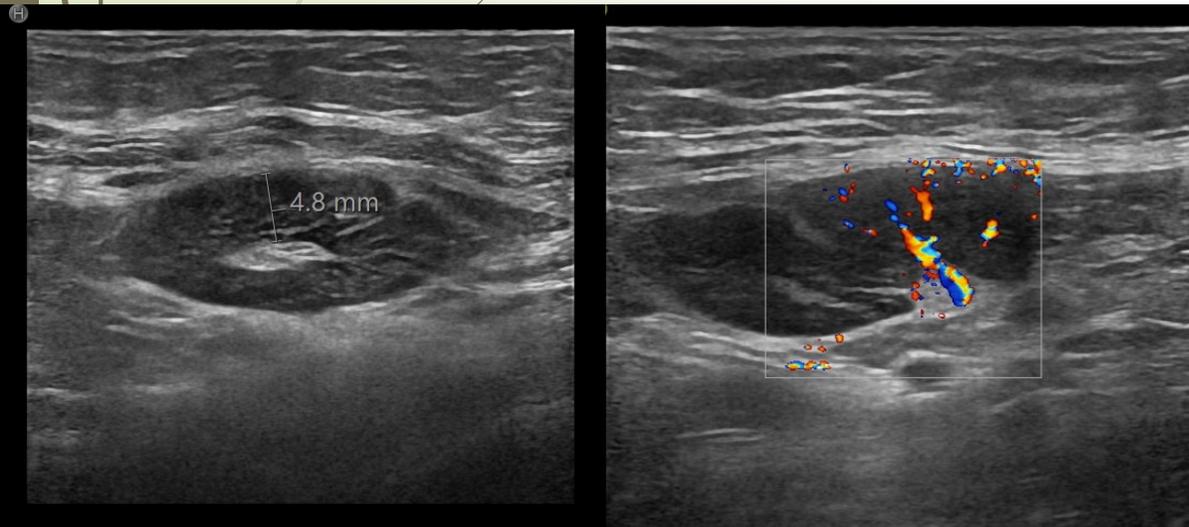
Case II

- ▶ 80 ♀, M4 microcalcifications
- ▶ US-guided biopsy B1
- ▶ Subsequent punch biopsy, B5a, low grade papillary carcinoma
- ▶ Surgical excision, 10 mm low grade papillary carcinoma.



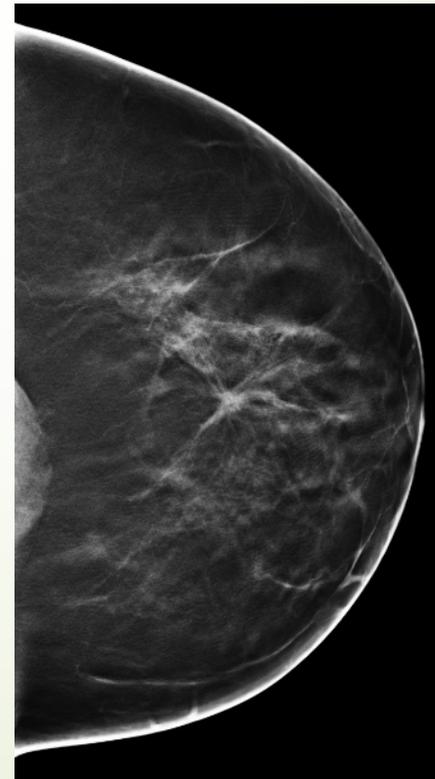
Case III

- ▶ 92 ♀, recent diagnosis of left breast ca
- ▶ Axillary abnormal node, U4, initial biopsy: no nodal tissue
- ▶ Repeat biopsy showed metastatic involvement



Case IV

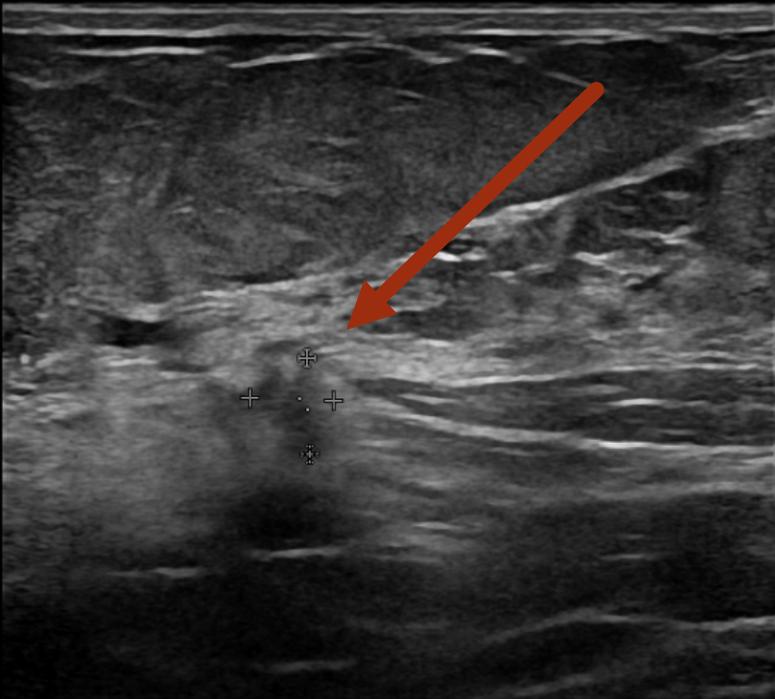
- ▶ 54 ♀, Clinically indeterminate mass (E3), M5, U5 (tomosynthesis image below showing spiculated lesion central left breast)
- ▶ Initial core biopsy B1 – 3 cores taken, 2 views acquired.
- ▶ Repeat core biopsy showed grade II invasive carcinoma with lobular features
- ▶ Surgery, 12 mm invasive carcinoma, no special type, 0/2 SNB



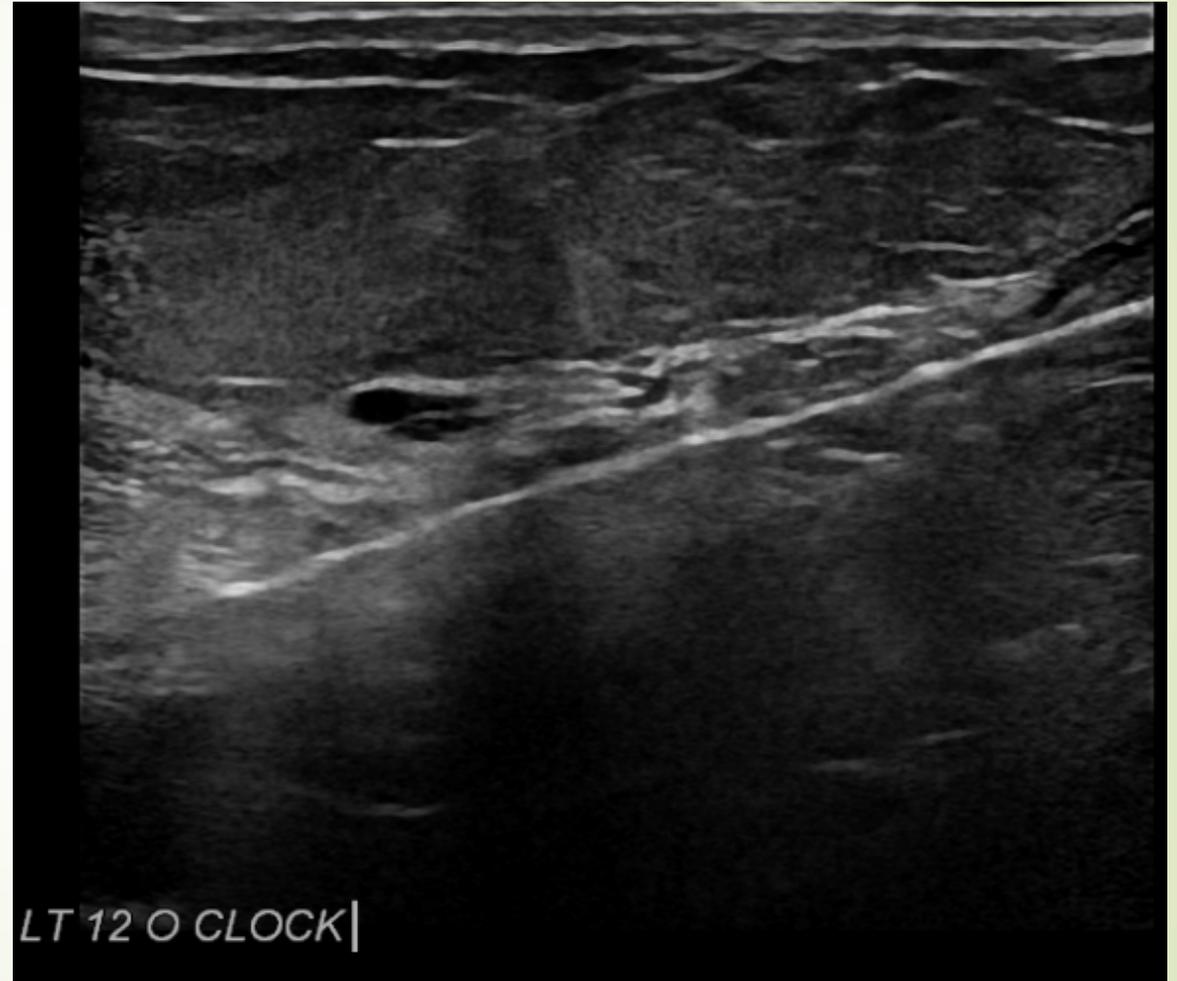
Initial ultrasound and biopsy was performed by a junior advanced practitioner. The artefact created by overlying Cooper's ligament was misinterpreted as the lesion. The biopsy yielded subcutaneous fat only.



Subsequent ultrasound procedure was performed by an experienced practitioner. The arrow indicates the correct site of the lesion which is sited deeper within the fibroglandular tissue.



This longitudinal image shows the biopsy needle going directly through the correct lesion. The biopsy result was a grade 2 invasive lobular carcinoma.



Recommendations for Multidisciplinary Meeting (MDM)

- ▶ Repeat biopsy decision needs to be agreed by the operating radiologist, unless:
 - ▶ Imaging reported as M4 or above or highly clinically suspicious mass (U4+)
 - ▶ If radiologist reports “B1 not acceptable”
 - ▶ If biopsy procedure was complicated (hematoma, very hard mass, not enough tissue etc.)
 - ▶ If there is clear evidence of target being missed (i.e. no nodal tissue, no calcification etc.)



Recommendations for Radiologists

- ▶ Number of cores need to be mentioned in reports
- ▶ Images of “needle through the lesion”, preferably in two planes, longitudinal and axial.
- ▶ Extra tissues need to be taken if complex diagnosis or normal breast tissue is expected (phyllodes, hamartoma, complex sclerosing lesion etc.)
- ▶ Phrases like “B1 acceptable”, “B1 not acceptable” is helpful.

Thank you