

A CLINICAL AUDIT INTO THE UPGRADE RATES OF BREAST LESIONS DURING SECOND-LINE VACUUM ASSISTED CORE BIOPSIES

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Background

- Breast cancer is the most common cancer and the 4th most common cause of cancer deaths in the UK. (1)
- The lifetime risk of being diagnosed with breast cancer is 1 in 7 and this incidence is only thought to escalate by 2035. (1,2)
- In order to improve patient management and decrease mortality by early detection, the National Health Service introduced their Breast Screening Programme (NHSBSP) in 1988.
- Breast lesions are frequently detected following patient complaint if not through the NHSBSP and patients routinely undergo triple assessment.
- NHSBSP guidelines recommend sampling by needle core biopsy (NCB) or vacuum-assisted core biopsy (VACB) as the initial procedure and VACB used to re-biopsy an indeterminate lesion. (3)

NHSBSP guidelines

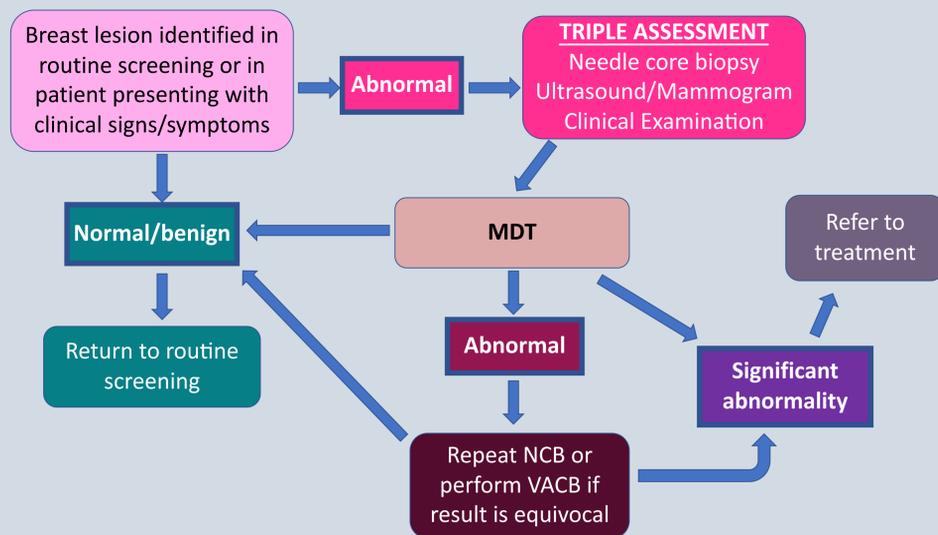


Fig 1. Diagram demonstrating the NHSBSP guidelines for management of an identified breast lesion (3)

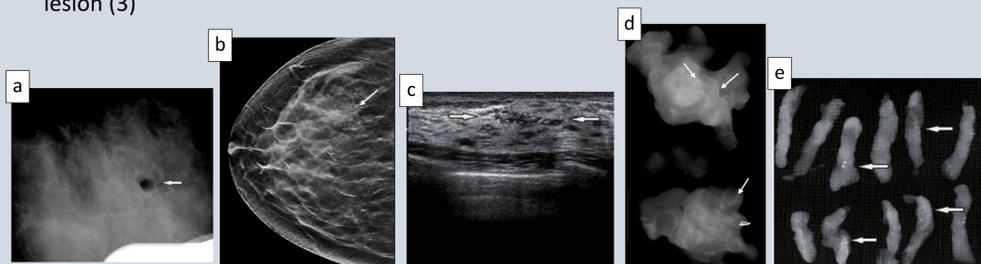


Fig 2. Images to show a) & b) stereotactic VACB, c) ultrasound-guided VACB, d) & e) VACB specimen mammography highlighting the targeted microcalcifications. (6)

Aims

- To determine the histological concordance and upgrade rates of tissue specimens taken from breast lesions diagnosed initially by NCB in comparison to second-line VACB.
- To demonstrate the impact of upgrading rates on patient outcomes.
- To further conclude whether current VACB techniques are favourable for clinical practice and patient management.

Method

Study type

- Retrospective evaluation study

Study inclusion criteria

- All patients (n=337) presenting in a three year period for second-line VACB after an initial NCB.

Data collection

- Histological reports and radiological reports were reviewed and data was manually collected at a regional breast centre in a teaching hospital in South Manchester.

Outcomes collected

Indications for VACB
Radiological imaging used for VACB
Pathological classification of sample after NCB and VACB
Needle gauge size during VACB
Weight of sample after VACB
Marker clip insertion and location during VACB
Management post-VACB

Table 1. Main outcomes measured in audit

Results

- There was no change in pathology in 40% (133/332) of the patient cases between NCB and VACB.
- Of the 199 histological reports that were discordant, 38 were due to differences between various B3 lesion subtypes. 5 out of the 199 discordant reports were due to change in the nuclear grade of the B5 lesions.
- 21.4% of histological reports were upgraded to pre-cancer or cancer at second-line VACB.
- Surgical excision was further recommended by MDT in 5% of cases for definitive diagnostic purposes.
- All the patients diagnosed with malignant lesions on second-line VACB underwent definitive surgery without further diagnostic procedures.
- 63% of VACB samples were below the 4g recommended sample mass. (3)
- 89% of VACB procedures had a marker clip inserted and 73% of reports noted that the marker clip was in an appropriate position.

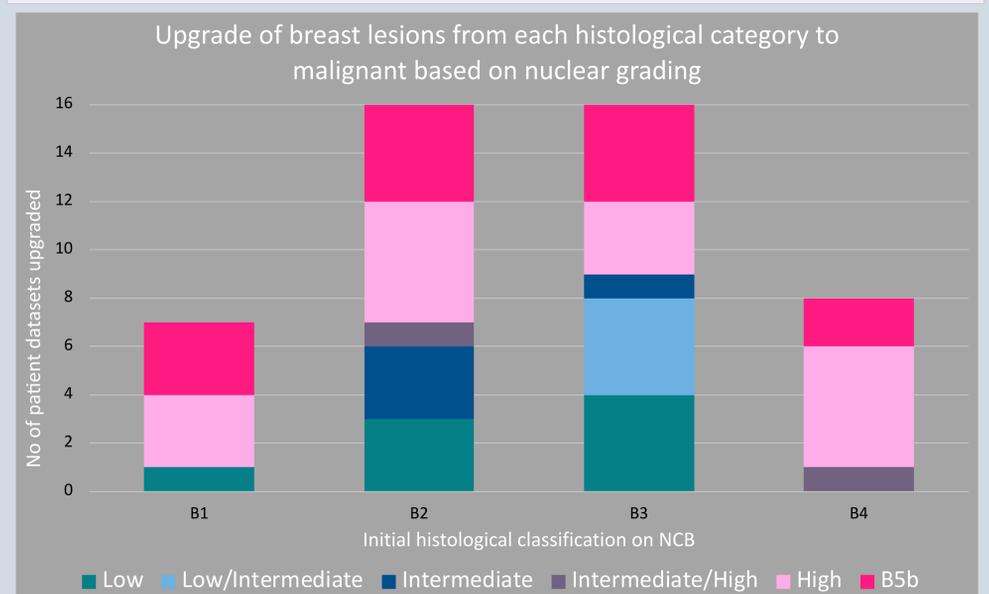


Fig 3. Bar chart demonstrating the upgrade rates at second line VACB after initial NCB.

Discussion

- Although VACB can yield a larger tissue sample, a randomized study performed in 2015 at the same breast unit as this study indicated that the sensitivity of VACB was similar to NCB with values of 78% and 79% respectively (4). This raises the question whether the NCB or VACB is more suited in producing an accurate histological classification.
- Common reasons for not inserting a marker clip was due to pain or haematoma formation.
- Various needles carry different masses and it is important to recognise this as a limitation when attempting to collect at least 4g of sample. (5)

Conclusion

The use of VACB in current practice has significantly decreased the number of patients having a diagnostic excision biopsy. The upgrade of breast lesions on second-line VACB has allowed patients to undergo definitive management with minimally invasive procedures.

Recommendations

- Weigh the sample during the procedure to calculate if more tissue is required.
- Comparing the histological classification of VACB and NCB samples with patients that undergo surgical wide local excision (WLE) or mastectomies, where more tissue is available to sample, may provide more data on accuracy of sampling.
- Carry out post-procedural imaging to better confirm sampling accuracy.
- Re-audit at the centre in 3 years.

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