

Accuracy of axillary lymph node ultrasound and core biopsy in patients with lobular carcinoma



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Introduction

- Anecdotal, lymph node lobular carcinoma metastases are difficult to perceive at preoperative axillary lymph node ultrasound. Pre-operative axillary staging plays a pivotal role in further patient management (e.g. surgical planning), and is an important early predictor of patient prognosis.
- Accurate assessment aims to avoid the need for further axillary treatment either by second stage surgery or radiotherapy.
- There is no definite agreed standard. Several groups have reported sensitivity for detection of metastatic axillary lymph nodes ranges from 54.1% to 68.2%.
- We present an audit of lobular cancer patients, their preoperative staging of the axilla, operative axillary node histology, and any documented impact/change in patient management caused by a false negative axillary ultrasound.
- In our unit, sonographically normal lymph node (LN2) criteria include a cortical thickness of 2 mm or less. Sonographically indeterminate nodes are scored as LN3.

Methods

- Retrospective analysis of multidisciplinary meeting records, hospital electronic pathology and imaging systems, were used to identify patients operated upon for invasive lobular carcinoma in our Trust from January 2012-March 2018.
- Neoadjuvant chemotherapy patients were excluded due to histological difficulty evaluating nodes post-chemotherapy.
- Descriptive statistics were performed.

Results

- 374 women were identified, of which 71 patients were excluded due to neoadjuvant chemotherapy.
- All study patients underwent axillary ultrasound. The overall combined sensitivity and specificity of preoperative axillary staging (ultrasound +/- core biopsy) in lobular cancer study patients was 63.6% and 100%, respectively.
- 167 patients had LN2 lymph nodes at axillary staging, 4 of these underwent endocrine therapy and so were excluded.
- 136 patients had LN3 or above lymph nodes at pre-op axillary staging.

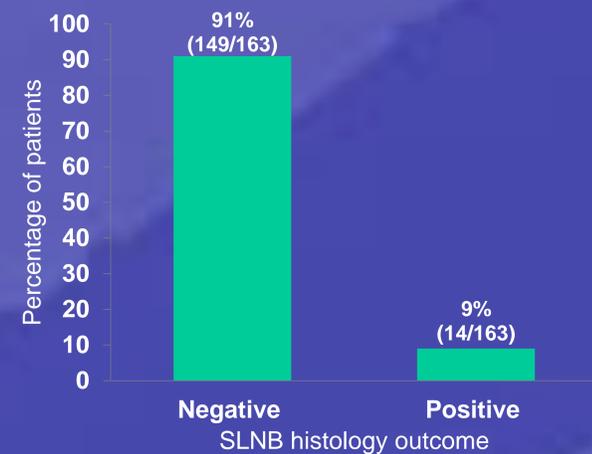
Figure 1: Comparison of axillary lymph node status as assessed on US +/- core biopsy with sentinel lymph node biopsy (SLNB) results

Pre-op axillary staging	SLNB result				Total
	Positive		Negative		
	LN2	≥LN3	LN2	≥LN3	
Positive	0	49	0	0	49
Negative	14	14	149	73	250
Total	77		222		299

- 163 patients were operated upon with a sonographically normal axilla; their outcomes are summarised in Box 1

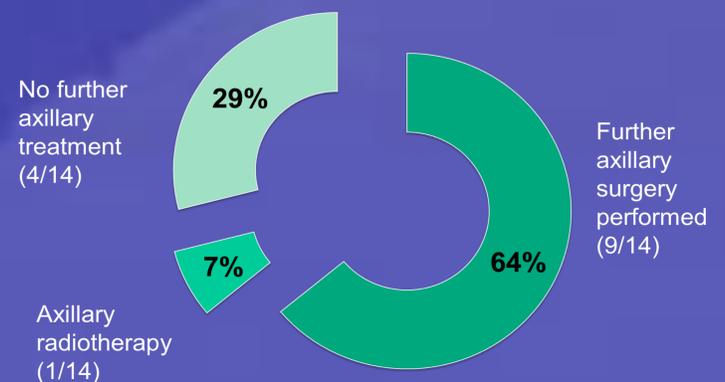
Box 1: Outcomes of patients with normal axillary ultrasound (LN2)

The graph below demonstrates the histology results of the SLNB in the patients with a radiologically normal axilla.



As above, 9% (14/163) of patients had a SLNB positive for macrometastases. and therefore needed to be considered for further axillary treatment. Their management is shown below:

Further axillary management in patients with unexpected lymph node metastasis at SLNB.



For the 9 patients that had further axillary surgery, the results of their initial positive SLNB and their corresponding final nodal burden at axillary clearance are shown below:

Positive SLNB	Axillary clearance results	Positive SLNB	Axillary clearance results
2/2	1/11	2/2	0/6
3/3	1/10	1/2	0/13
1/1	1/9	1/2	9/11
4/5	1/9	1/1	0/13
4/4	6/13		

Conclusions

- Lobular macrometastases can be present despite normal axillary ultrasound examination and, although this study demonstrates a nationally acceptable preoperative axillary staging sensitivity, unexpected macrometastases found at surgery do in many cases require further treatment.
- This highlights the importance of preoperative assessment in order to prevent the patient undergoing further axillary treatment which may further delay treatments and patient recovery.

Further work:

- We aim to collect the same data on patients with invasive ductal carcinoma and compare sensitivity and specificity to discern if histology types have an impact of accuracy of axillary ultrasound staging.

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