Clinical utility of axillary ultrasound before surgery in breast cancer patients with biopsy proven node positive before neoadjuvant treatment

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Methods

Between January 2011 and January 2015, 287 patients with a diagnosis of invasive breast cancer T1-4 N0-3 who underwent NAT were included in the study. All patients had an AUS before NAT, and 185 (65%) of all patients had an AUS before surgery. AUS findings were correlated with pathologic axillary status.

Results

Median age was 51.76 (range, 24-87 years old). The majority of patients had a T2 (63.3%) tumor and 62% were classified as N1-N3. (Fig.1) AUS pre NAT was suspicious in 210 (73%) of the 287 patients. Of this, 168 (80%) were positive by fine needle aspiration (FNA) and classified as N1-2. Of these patients, 111 (66%) had an AUS before surgery. Twenty-two (88%) of 25 AUS-suspicious patients were node positive at surgery compared to 57 (66%) of 86 AUS-normal patients. (p = 0.03) (Fig. 2) Axillary lymph node dissection was done in 123 (73%) while SLN + ALND were done in the rest. Of the 35 patients with AUS- normal who underwent a SLN, 27 (77%) had residual axillary disease and in 26 (96%) the SLN was positive, with a false negative rate (FNR) of 3.6%. Molecular subtypes by immunohistochemistry were classified as luminal A in 39 patients (13.6%), Luminal B Her2 negative in 118 (41.4%) patients, Luminal B Her2 positive in 38 (13.3%), triple negative in74 (26%) patients and Her2 positive in 16 (5.7%) patients. Her2 positive patients had statistically significant more axillary pathologic complete response than the other subtypes.

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<th>ypN1/2</th>
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<td>US +</td>
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<td>US -</td>
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Fig 2. US before surgery

Conclusions

In breast cancer patients with pathologically proven axillary metastasis before NAT, AUS before surgery has a high specificity and can triage patients to ALND. In cases of a normal AUS before surgery, patients can benefit from a SLN as the FNR of this is low. Improvement in AUS performance is needed to increase the sensitivity of AUS before surgery in patients with normal appearing AUS after NAT.

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