# Reply to "Implications of abnormal preoperative axillary imaging in the post Z011 era"

## Melissa Pilewskie, Monica Morrow

Breast Service, Department of Surgery, Memorial Sloan Kettering Cancer Center, New York, NY 10065, USA *Correspondence to:* Monica Morrow, MD. Breast Service, Department of Surgery, Memorial Sloan Kettering Cancer Center, 300 East 66<sup>th</sup> Street, New York, NY 10065, USA. Email: morrowm@mskcc.org.

Submitted Jun 15, 2016. Accepted for publication Jul 03, 2016. doi: 10.21037/gs.2016.07.03 View this article at: http://dx.doi.org/10.21037/gs.2016.07.03

We would like to take the opportunity to address a number of points brought up in the accompanying commentary by Drs. Selleck and Senthil. The objective of the paper under discussion is to examine whether the routine practice of axillary imaging is beneficial in selecting patients who will require an axillary lymph node dissection (ALND) when managed according to ACOSOG Z0011 eligibility criteria. The study specifically refers to women presenting with cT1-2N0 invasive breast cancer undergoing breastconserving surgery. Our results highlight that regardless of axillary imaging findings, the majority of patients presenting with early-stage disease in the absence of palpable adenopathy do not have  $\geq 3$  positive sentinel lymph nodes (SLNs) and therefore can be spared the morbidity of ALND. The authors of the commentary question the results by comparing our findings to papers with different methodologies and patient populations. The referenced study by Reyna and colleagues reports on a singleinstitution experience with routine axillary ultrasound and reflex fine needle aspiration (FNA) for any abnormalappearing lymph node. Among a cohort of 384 women with cT1-2N0 invasive breast cancer, they report a false-negative rate of axillary ultrasound with FNA of 48%. It is well known that the positive predictive value of axillary imaging is improved with the addition of FNA. At the present time, the relevant clinical question is not simply the ability of ultrasound with or without FNA to identify an axillary metastasis, but how frequently 3 or more nodes containing metastases are identified, since this is the population who would be spared sentinel node biopsy. At our institution, we do not routinely perform axillary imaging or FNA for clinically node-negative women undergoing upfront breastconserving surgery, as ALND is only performed in women found to have 3 or more positive SLNs.

The authors are correct in noting that there have been mixed results in regards to the ability of axillary imaging and needle biopsy to predict high axillary disease burden. An important caveat to the available literature is that the prior studies have included heterogeneous patient populations, often missing data regarding clinical nodal status. Although having a positive FNA does increase the potential for harboring  $\geq 3$  positive SLNs, in the appropriate clinical setting, this does not mandate upfront ALND. As surgeons, we need to continue to assess the balance of maximizing oncologic outcomes while minimizing surgical complications. Longer-term follow-up from the ACOSOG Z011 trial was recently reported at the 2016 American Surgical Association meeting. With a median followup of 9.25 years, there remains no significant difference in locoregional recurrence rates among women with 1-2 positive SLNs managed with sentinel lymph node biopsy (SLNB) alone or ALND, with 10-year regional recurrence rates of 0.5% in the ALND cohort and 1.5% in the SLNB group (1).

The commentary concludes that identification of all node-positive patients with axillary imaging and needle biopsy is appropriate to triage patients to neoadjuvant chemotherapy and potential clinical trials. While this raises an interesting theoretical question, it is too broad to apply to all breast cancer patients. Among all clinically nodenegative patients, approximately 25% will harbor nodal metastases, with a very small percentage having  $\geq$ 3 positive nodes. We have recently reported that among a cohort of over 5,200 clinically node-negative breast cancer patients managed without the routine use of axillary imaging, only 6% had  $\geq$ 3 positive SLNs (2). We also know that nodal response to neoadjuvant chemotherapy differs based on breast cancer subtype. Identification of axillary metastases in clinically node-negative patients may benefit select subsets of patients, presumably those with the greatest likelihood of nodal response or those who would require ALND for a positive SLN (women undergoing mastectomy or those having partial breast irradiation). However, the majority of breast cancer patients have hormone receptor positive, HER2 negative disease, which is the breast cancer subtype least likely to have a complete nodal response following neoadjuvant chemotherapy. Therefore, among cT1-2N0 patients with hormone receptor positive, HER2 negative disease eligible for upfront breast conservation, there may be an increase in the probability of ALND following neoadjuvant chemotherapy, as any residual nodal disease would warrant ALND. In addition, results are pending on the role of the 21 gene recurrence score (Oncotype DX<sup>™</sup>) (Genomic Health, Redwood City, CA, USA) in predicting the benefit of chemotherapy in women with lowvolume nodal disease and estrogen receptor positive, HER2 negative breast cancers, meaning that tumor biology and not just the presence of a single nodal metastasis will continue to refine the appropriate indications for chemotherapy use. Neoadjuvant chemotherapy has never been shown to improve survival compared to adjuvant chemotherapy for any subset of breast cancer patients, so the finding of a positive node does not mandate its use. Given these variable clinical situations, we prefer to individualize patient management and continue to manage appropriate clinically node-negative patients undergoing upfront breast conservation with SLNB without preoperative axillary imaging to safely minimize surgical morbidity. This approach has now allowed 84% of our 700 patient series of women treated according to ACOSOG Z0011 to avoid axillary dissection, a rate far greater than that seen among women with biopsy-proven axillary metastases who undergo neoadjuvant chemotherapy and obtain a complete clinical response. We recently reported that 47% of patients

**Cite this article as:** Pilewskie M, Morrow M. Reply to "Implications of abnormal preoperative axillary imaging in the post Z011 era". Gland Surg 2016;5(4):453-454. doi: 10.21037/gs.2016.07.03

with biopsy-proven nodal metastases were able to avoid ALND following neoadjuvant chemotherapy by having  $\geq 3$  identifiable sentinel nodes and a nodal pathologic complete response (3).

## **Acknowledgements**

None.

## Footnote

*Provenance:* This is a Guest Correspondence commissioned by Section Editor Rong Tang (Breast Surgery, Hunan Tumor Hospital, Changsha, China; Surgical Oncology, Massachusetts General Hospital, Harvard Medical School, Boston, USA).

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Response to:* Selleck M, Senthil M. Implications of abnormal preoperative axillary imaging in the post Z011 era. Gland Surg 2016;5:372-4.

## References

- Giuliano AE, Hunt K, Ballman KV, et al. Ten-year survival results of ACOSOG Z0011: A randomized trial of axillary node dissection in women with clinical T1-2 N0 M0 breast cancer who have a positive sentinel node (Alliance). J Clin Oncol 2016;34:abstr 1007.
- McCartan D, Stempel M, Eaton A, et al. Impact of Body Mass Index on Clinical Axillary Nodal Assessment in Breast Cancer Patients. Ann Surg Oncol 2016. [Epub ahead of print].
- Mamtani A, Barrio AV, King TA, et al. How Often Does Neoadjuvant Chemotherapy Avoid Axillary Dissection in Patients With Histologically Confirmed Nodal Metastases? Results of a Prospective Study. Ann Surg Oncol 2016. [Epub ahead of print].