

**CONTROVERSIES IN AXILLARY SURGERY:  
*Recent Advances 2019***

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The goals of axillary surgery for breast cancer have historically been to guide systemic therapy, to control regional node disease, and to a certain extent improve survival rates.

It is now possible to stratify the risk factors for axillary and systemic recurrence of breast cancer using a combination of clinical-pathologic features and gene profiling of the primary cancer at the time of diagnosis. The risk factors for the development of arm lymphedema have also now been well defined. Over the last two decades, significant effort has been directed at reducing the risk of regional recurrence of cancer and the risk of arm edema by de-escalating treatment directed at the axilla and by improvements in systemic therapy.

Improvements in sentinel node biopsy techniques generally have lowered the risk of false-negative axillary staging. For patients presenting with clinically negative nodes, sentinel node biopsy techniques have been refined by using diagnostic axillary ultrasound. For patients with positive nodes at the time of presentation who have an adequate response to neoadjuvant therapy, targeted sentinel node techniques now allow patients to have sentinel node biopsy in lieu of axillary dissection. Axillary reverse mapping can also now be used to identify the predominant efferent lymph nodes from the arm at the time of axillary surgery.

In addition, axillary radiation therapy has recently been shown to be non-inferior to axillary dissection in selected patients having primary surgical therapy (surgery first). And, as a further example of an attempt to de-escalate axillary treatment, there is a current trial which randomizes patients with estrogen receptor-positive cancers having a low risk gene profile and positive sentinel lymph nodes to whole breast irradiation plus regional node radiation versus whole breast irradiation alone. This trial exemplifies the trend of stratifying patients by biologic risk factors for recurrence into clinical trials aimed at reducing therapy to the regional nodes.

When these advances are added to the potential for clinical trials by reconstructive microsurgeons to reduce the risk of lymphedema after axillary treatment, the promise of significantly reducing historical morbidity rates from post-treatment lymphedema seems realistic.