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De-Escalation Decisions: New Study Finds Sentinel Node Surgery Omission Does Not Amplify Radiation Therapy

Suggests Multidisciplinary Clinical Teams are Working Together to Optimize Care

Abstract: Impact of Omission of Sentinel Lymph Node Surgery on Radiation Treatment in Patients Age 50 and Older with Breast Cancer Treated with Lumpectomy: A Single-Institution Retrospective Review

Seattle, WA, May 1, 2026—Lumpectomy patients whose sentinel lymph node (SLN) surgeries were omitted based on the findings of the SOUND (Sentinel Node vs Observation After Axillary UltraSouND) and INSEMA (Intergroup Sentinel Mamma) trials were no more likely to undergo escalation of radiation therapy (RT) than patients with similar tumors who underwent SLN surgery, according to a new study presented this week at The American Society of Breast Surgeons (ASBrS) Annual Meeting in Seattle.

"The possibility that a decrease in one treatment modality will lead to an increase in another treatment modality is a real-world concern," comments study researcher Matthew Hager, M.D., breast surgical oncology fellow at Mayo Clinic in Rochester, MN. "Today a growing number of well-selected patients with low-risk breast cancer are being spared SLN surgeries. Our study is one of the first to examine radiation therapy in the setting of nodal surgery omission."

Researchers examined a large patient population at the Mayo Clinic in Rochester who met SOUND and INSEMA trial criteria and found that those spared axillary surgery were more likely to have been treated with partial breast radiation (PBI) or received no radiation compared to those who underwent nodal surgery. This is notable because most patients in these two large groundbreaking clinical trials received whole breast radiation (WBI).

Dr. Hager notes that similarly to SLN surgery, research-supported RT de-escalation is also a growing trend. While nodal status is important to radiation oncologists for staging and local and regional disease control, this study shows that for appropriate patients, scaling back RT even with the omission of nodal surgery is not uncommon.

“This suggests that our multidisciplinary care team is working together in implementing advances in management and integrating information from their individual medical specialties to optimize and personalize patient care,” he says.

The retrospective study included 999 women age 50 and older with 1,016 breast cancers treated with breast conserving surgery between January 1, 2020 and August 1, 2025. All women had cT1 or T2 and ER+/HER2- tumors, similar to the patient population in the SOUND and INSEMA trials. All women were examined with physical exam and ultrasound of the axillary lymph nodes. For study inclusion, they had normal nodes on ultrasound or if any nodes were suspicious, they had a negative biopsy.

All patients were treated with breast conserving surgery. SLN surgery and RT trends were analyzed for the patient group overall and independently for women between age 50 and 69 and for those over age 70 using Cochran-Armitage trend tests.

During the 68-month time period, 66.8% of the complete study patient population had SLN surgery, with omission in 33.2%. From 2020 to 2025, SLN surgery significantly decreased from 74.5% to 49.1% ($p<0.001$).

Of those who did not undergo SLN surgery, 51.0% received PBI and 27.5% received no RT, while 21.5% were treated with WBI. From 2020 to 2025, PBI among this group increased from 39.5% to 61.1% ($p=0.10$).

Of those undergoing SLN surgery, most were node negative and rates of PBI and WBI were each approximately 46% for node negative patients. Positive nodes were identified in 9.1% of the surgery group, 95.2% of whom were treated with WBI. In the SLN group overall, rates of PBI and WBI changed little over time ($p=0.73$ and $p=0.85$).

Among patients aged 50 to 69 years with SLN surgery omission, 11.1% also had RT omission compared to 30% in patients over age 70. Of those who underwent RT, PBI was most common in both age groups.

“This study demonstrates de-escalation of both radiation and surgery in appropriately selected patients,” concludes Judy Boughey, M.D., Chair of Division of Breast and Melanoma Surgical Oncology at Mayo Clinic in Rochester and senior study author. “Today many patients with low-risk disease are being offered both less surgery and less radiation, which ultimately results in more personalized patient care.”

Impact of Omission of Sentinel Lymph Node Surgery on Radiation Treatment in Patients Age 50 and Older with Breast Cancer Treated with Lumpectomy: A Single-Institution Retrospective Review

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Background/Objective: With recent trials, including SOUND and INSEMA, showing the safety of omission of sentinel lymph node (SLN) surgery in select patients undergoing breast-conserving therapy, SLN surgery is being omitted in practice for some patients over the age of 50 with early stage (T1-T2), clinically node negative, hormone receptor positive, HER2 negative breast cancer. However, most patients in these trials received whole-breast radiotherapy (WBI). The impact of SLN omission on radiation (RT) warrants evaluation, since de-escalation of surgery could unintentionally influence radiotherapy patterns towards WBI. We sought to determine trends in use of SLN surgery and RT and the impact of omission of SLN surgery on RT. Additionally we sought to evaluate (1) in patients 50-69 whether SLN omission is associated with greater use of WBI and lower use of PBI, and (2) in patients 70 or older whether SLN omission affects RT omission.

Methods: With IRB approval, we conducted a retrospective review of women age 50 and older diagnosed with cT1/cT2 ER+/HER2- breast cancer treated with breast-conserving surgery (BCS) between 1/1/2020-8/1/2025 at a single institution. Patients who underwent neoadjuvant chemotherapy were excluded. SLN surgery trends along with use of RT were evaluated with Cochran-Armitage trend tests. Type of RT was categorized into no radiation, PBI and WBI.

Results: We identified 1,016 breast cancers among 999 women diagnosed with cT1/cT2 ER+/HER2- disease that underwent BCS. SLN surgery was performed in 66.8% while 33.2% had omission of SLN surgery. SLN surgery significantly decreased from 74.5% in 2020 to 49.1% in 2025, p<0.001. Those who underwent SLN surgery were younger (64 vs 76, p<0.001), more commonly cT2 (19.2% vs 6.5%, p<0.001), higher grade (59.9% vs 48.5%, p=0.001), and more likely to undergo RT (92.5% vs 72.5%, p<0.001). Among those who did not undergo SLN surgery, PBI was most common at 51.0%, followed by no RT in 27.5% and WBI in 21.5%. Rates of PBI among this group increased from 39.5% in 2020 to 61.1% in 2025 (p=0.10) while WBI had a minimal increase (15.8% to 24.1%, p=0.17). Among those who underwent SLN surgery, 90.9% were pN0. Both PBI and WBI administration had similar rates (~46%) in this group. 95.2% of those who were pN+ underwent WBI. Within the SLN surgery groups, PBI and WBI rates remained stable over time (p=0.73 and p=0.85). Overall, in patients with omission of SLN surgery (compared to those with SLN surgery), rate of WBI was lower (21.5% vs 50.9%, p<0.001), rate of PBI was higher (51.0% vs 41.6%, p=0.004) and omission of RT was higher (27.5% vs 7.5%, p<0.001). Among patients aged 50-69 years, RT was omitted in 11.1% of patients with omission of SLN surgery compared to 5.8% of the SLN surgery group (p=0.19). Those with omission of SLN surgery who underwent RT were more likely to undergo PBI (75.0%) compared to WBI (25.0%). In those who had SLN surgery, WBI was more utilized compared to PBI (52.7% vs 47.3%). Patients aged 70+ who had omission of SLN surgery were more likely to have PBI (48.6%) or omission (30%) of RT compared to WBI (21.4%). Whereas those who had SLN surgery were more likely to receive WBI (56.3%) vs PBI (28.9%) or omission of RT (14.8%).

Conclusion: With increased adoption of omission of SLN surgery from 2020 to 2025, rates of RT treatment and use of WBI did not increase. In fact, patients who had omission of SLN surgery were more likely to have PBI or omission of radiation compared with those who underwent SLN surgery. With multidisciplinary coordinated care de-escalation of axillary surgery, did not hinder de-escalated approaches to radiotherapy in well suited patients. In selected, low-risk patients, we are successfully de-escalating both axillary surgery and radiation.

Figure: