



Sentinel Lymph Node Mapping and Biopsy in Breast Cancer Patients During the COVID-19 Pandemic

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LETTER TO THE EDITOR,

The coronavirus disease 2019 (COVID-19) pandemic has caused significant clinical practice changes in the oncology field, with the goal of minimizing the risk of COVID infection while maintaining cancer treatment as a priority. Recently, the *Annals of Surgical Oncology* provided a comprehensive guideline of key measures to successfully navigate the challenges of cancer care during COVID. The guideline provides perspectives on creating a safe environment for surgical oncology care by redirecting the multidisciplinary model and surgery prioritization, while advocating for cancer patients.¹

Several recommendations for the management of breast cancer patients have suggested, when clinically indicated, the implementation of preferential outpatient procedures,² neoadjuvant endocrine therapy,³ and the omission or delay of radiation and/or reconstruction,^{4,5} with the goal of lowering the COVID exposure risks for patients and reducing the use of healthcare resources. However, guidelines on lymph node surgery for cancer staging are currently unavailable. The intent of this letter is to provide our experience on the management of the sentinel lymph node (SLN) biopsy procedure that aligns with the principles of the *Annals of Surgical Oncology* guidelines.

SLN biopsy continues to be the standard of care, with the use of a dual tracer technique (technetium-99 [99mTc] and blue dye) for the highest SLN detection sensitivity; however, the use of 99mTc requires an additional

preoperative visit to the Nuclear Medicine Department for radioisotope injection. This could potentially lead to unsafe patient and healthcare provider exposure, which could be avoided by replacing the 99mTc mapping with a tracer that can be administered intraoperatively in addition to the blue dye.

Since 2016, SLN mapping using indocyanine green (ICG) dye and near infrared (NIR) fluorescence detection has been utilized at the Cleveland Clinic Breast Cancer Center. Our group published results demonstrating that the use of ICG for lymphatic mapping and SLN identification offers many potential advantages, including the ability to inject the material in the operating room while the patient is under anesthesia, and using NIR to visualize lymphatic anatomy and flow in real time, showing equivalent detection rates compared with 99mTc.⁶

The use of this alternative technique has been extremely useful for SLN mapping during the COVID pandemic. At the time of surgery, after induction of general anesthesia, the patient receives a subdermal injection of 2 mL of blue dye and an additional subdermal injection of 1 mL of 0.5% ICG solution into the subareolar region. The area is massaged toward the SLNs and the lymphatic drainage anatomy, and SLNs are then visualized in real time under fluorescence using an NIR camera.⁶ The ICG fluorescent lymph node(s) is/are identified and then confirmed as sentinel via the blue staining dual tracer visualized from the injected blue dye.

Despite the challenges caused by the COVID-19 pandemic, the ability to implement newer technologies is an invaluable armamentarium to maintain high-quality care. We believe the ICG-guided SLN mapping represents a safe and accurate alternative to the traditionally used 99mTc that allows limited risk of exposure for both patient and healthcare provider during the COVID-19 pandemic.

DISCLOSURES Daniela Cocco and Stephanie A. Valente declare no conflicts of interest.

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