

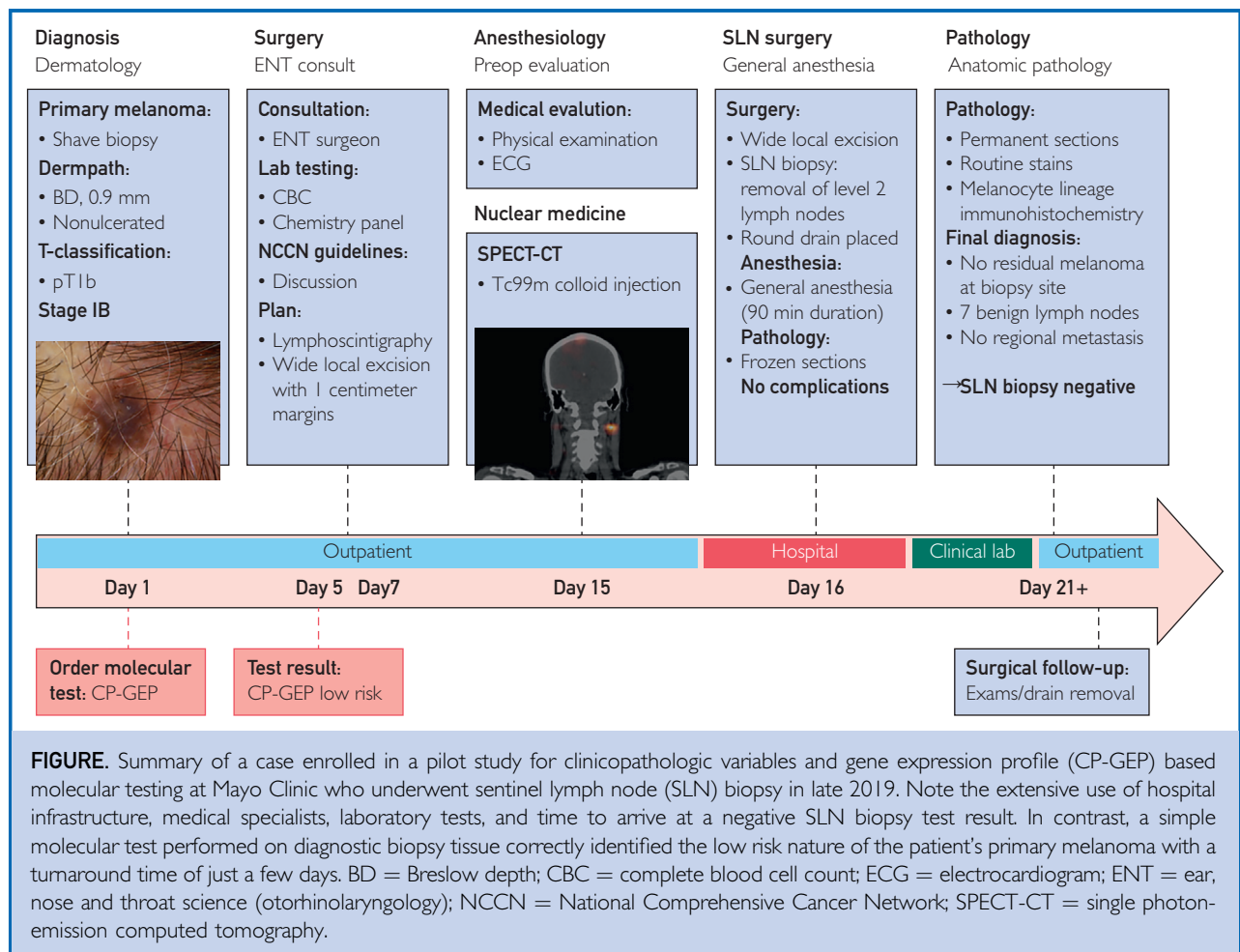
Deselecting Melanoma Patients for Sentinel Lymph Node Biopsy During COVID-19: Clinical Utility of Tumor Molecular Profiling

**To the Editor:** The surgical management of newly diagnosed melanoma patients during the coronavirus disease 2019 (COVID-19) pandemic is challenging because access to health care facilities is restricted. Specifically, elective staging procedures such as the sentinel lymph node (SLN) biopsy are difficult to accommodate. As surgical capacity diminishes, surgical

guidance for clinicians aims to restrict SLN biopsy in a stepwise fashion.<sup>1,2</sup>

SLN biopsy is a more complex and time-consuming procedure than is often appreciated because it requires the extensive use of hospital infrastructure and medical specialists. This is shown by a representative case of a Mayo Clinic patient who enrolled in a feasibility study of a molecular method aimed to identify melanoma patients who are so low risk for metastasis that they can safely forgo SLN biopsy (Figure).<sup>3</sup> This study was reviewed and approved by the Mayo Clinic Institutional Review Board. Following diagnosis, the patient met with a surgeon, underwent preoperative evaluation with customized testing to

ensure a safe recovery, and completed a technetium-99m scintigraphy (single-photon emission computerized tomography [SPECT]) in nuclear medicine combined with computed tomography (CT) to produce SPECT-CT scans. This was followed by SLN biopsy and a wide local excision of the primary tumor in the operating room under general anesthesia. Tissue was paraffin-embedded, sectioned, and stained by hematoxylin and eosin; and melanocyte lineage-specific immunohistochemistry was determined and interpreted by anatomic pathologists. In this case, 3 weeks passed from melanoma diagnosis to finalized SLN biopsy result. Surgery was followed by postoperative care.



Aggressive melanoma easily metastasizes, including to SLN, and a positive SLN biopsy result identifies patients with an increased risk of relapse and in need of adjuvant therapy. However, most melanoma does not metastasize to SLN. Nodal metastasis is found in less than 20% of patients who undergo SLN biopsy.<sup>3</sup> Although the removal of negative SLN has no discernible therapeutic effect, all patients who undergo SLN biopsy encounter a greater than 10% risk of complications.<sup>4</sup> There is a need for methods to identify patients who are so low risk that they can safely forgo SLN biopsy. We have previously reported on a melanoma risk-stratification approach which combines clinicopathologic (CP) variables with a gene expression profile (GEP) from primary diagnostic biopsy tissue.<sup>3</sup> Using the CP-GEP test, up to 80% of patients with T1b, 48% of patients with T2a, and 24% of patients with T2b melanoma may forgo the SLN biopsy procedure as they are categorized as low risk for nodal metastasis with an error rate

of less than 5%.<sup>3,5</sup> Test results are available within days (Figure) and do not require the patient to interact with health care providers. Hospital resources can be prioritized to other tasks.

New melanoma risk-stratification methods offer the opportunity to deselect low-risk patients for SLN biopsy. If, on the other hand, molecular testing indicates higher risk, patients can be prioritized for surgery after COVID-19 restrictions are relaxed. Molecular testing is now available through accredited clinical labs in the United States and have the potential to support the management of melanoma patients during the COVID-19 pandemic.

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**Potential Competing Interests:** Dr Meves reports a financial interest in a molecular test

(CP-GEP) being developed by SkylineDx in the area of melanoma. Mayo Clinic has reviewed this relationship and taken appropriate steps to protect the scientific integrity of the research. Dr Eggermont has an equity stake in SkylineDx.

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