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LYMPH NODE STATIONS COUNTS IN RETROSPECTIVE STUDIES—IMPORTANT END POINT, BUT INTERPRET WITH CAUTION

To the Editor:

We thank Drs Gonzalez-Rivas and Rami-Porta for their informative commentary on our previous article on the dual institution analysis of surgical lymph nodal upstaging using robotic, video-assisted thoracoscopic surgery, and open lobectomy for non–small cell lung cancer, which highlights the principles and importance of an oncologically sound lymph node dissection.¹ In this study we provided a comparison of the number of lymph node stations and number of individual lymph nodes resected as secondary end points.² The commentary appropriately pointed to the standards for a complete resection as defined by the International Association for the Study of Lung Cancer (IASLC). These include the resection of at least 3 mediastinal lymph node stations based on the respective location of the tumor, as well as the removal 3 N1 lymph node stations.³ Consistent with these recommendations a minimum of at least 3 mediastinal lymph node stations has been used in the lymph node sampling arm of the prospective American College of Surgeons Oncology Group (ACOSOG) Z0030 trial comparing lymph node sampling and complete lymphadenectomy,⁴ and has long been listed in the principles of surgery in the National Comprehensive Cancer Network treatment guidelines for non–small cell lung cancer.⁵ With respect to our and all retrospective studies however, there are several inherent limitations that might affect the total number of lymph node stations as they relate to minimum counts.

The main issue with assessing the total number of nodal stations arises in the labeling of lymph nodes specimens, and the subsequent review of pathology reports in retrospective studies. Because most surgeons routinely strive for a complete mediastinal lymph node dissection, multiple lymph node stations are typically removed en bloc, but

might be labeled and counted as 1 lymph node package. As a result, level 2R and 4R are often submitted and counted as a single “paratracheal” specimen in right-sided resections. Similarly, prevascular (level 5 and 6) and inferior mediastinal (level 8 and 9) might be counted as a single station, but truly reflect to individual lymph node stations. Other factors that have to be recognized are reoperations or previous lymph node dissections, which might also affect the lymph node harvest. Especially the subcarinal lymph nodes might be affected, because these might have been resected during a contralateral lung cancer operation, or a previous unilateral lymph node dissection. Additionally, segmental lymph nodes are typically not counted toward the required 3 N1 lymph node stations. When performing a lobectomy, surgeons routinely sample level 10 and level 11 nodes, but segmental lymph node stations are not routinely dissected individually. Although these nodes are dissected by the pathologist and counted in the sum of N1 lymph nodes, they would not be counted toward the total number of lymph node stations in retrospective reviews.

Although there are numerous reasons why the total number of lymph node stations in retrospective studies might be lower than recommended by guidelines, we do believe they provide valuable data end points when comparing different surgical approaches, because the same inherent limitations apply to all comparison groups in the same way. However, we should be cautious as to interpret lymph node stations counts in retrospectively as substandard relative to the IASLC recommendations.

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References

1. Gonzalez-Rivas D, Rami-Porta R. Commentary: Intraoperative lymph node assessment by robotic, video-assisted thoracoscopic surgery, and thoracotomy: none meet the international recommendations. *J Thorac Cardiovasc Surg.* 2019;158:1469-70.
2. Kneuert PJ, Cheufou DH, D'Souza DM, Mardanzai K, Abdel-Rasoul M, Theegarten D, et al. Propensity score-adjusted comparison of pathologic nodal upstaging by robotic, video-assisted thoracoscopic, and open lobectomy for non–small cell lung cancer: results from an international collaborative study. *J Thorac Cardiovasc Surg.* 2019;158:1457-66.
3. Rami-Porta R, Wittekind C, Goldstraw P, International Association for the Study of Lung Cancer (IASLC) Staging Committee. Complete resection in lung cancer surgery: proposed definition. *Lung Cancer.* 2005;49:25-33.
4. Darling GE, Allen MS, Decker PA, Ballman K, Malthaner RA, Inculat RI, et al. Randomized trial of mediastinal lymph node sampling versus complete lymphadenectomy during pulmonary resection in the patient with N0 or N1 (less than hilar) non-small cell carcinoma: results of the American College of Surgery Oncology Group Z0030 Trial. *J Thorac Cardiovasc Surg.* 2011;141:662-70.
5. National Comprehensive Cancer Network (NCCN). Clinical practice guidelines: non-small cell lung cancer. Version 6.2019. Available at: https://www.nccn.org/professionals/physician_gls/pdf/nscl.pdf. Accessed August 10, 2019.

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