Reply:

Y. Anzai

REPLY:

Thank you so much for your questions regarding the article related to the TNM staging by head and neck radiologists. Your first question was regarding how we determined "subspecialization in head and neck radiology."

Subspecialization in head and neck radiology was determined based on the self-claim of the survey responders. We asked the exact question, "Are you specialized to head and neck radiology?" To this question, 72.1% of the responders answered yes. Because the survey was sent to members of the American Society of Head and Neck Radiology (ASHNR), most (if not all) of the responders were neuroradiology-fellowship trained. It is estimated that 75–80% of ASHNR members are neuroradiology-fellowship trained. Those who claimed subspecialized in head and neck radiology, however, do not necessarily practice head and neck radiology exclusively. The vast majority of them interpret general neuroradiology. The intention of the survey is to understand the current practice of neuro/head and neck radiologists regarding imaging based cancer staging, not by general radiologists.

Regarding the second question as to how we measure a cervical lymph node, I agree with Dr Yousem that the size criteria alone have limited value.[1] The reference for the statement "the shortest axial diameter of lymph nodes is the most accurate indicator of metastatic versus reactive or normal node" was supposed to be the 1990 report by van den Brekel in *Radiology*.[2] The article by van den Brekel[2] is the largest study addressing the accuracy of size criteria of 2719 lymph nodes in 71 neck dissection specimens in patients with head and neck cancer. Although the measurement was not performed on imaging, it revealed a real performance of size criteria by using the 3D measurements correlated with pathologic results in patients with head and neck cancer. They measured short axial, long axial, and longest longitudinal diameters. Based on the pathologic correlation of each lymph node, they found that a short axial diameter was the most accurate predicting presence of nodal metastasis.

Furthermore, evidence review of diagnostic accuracy of cervical lymph node metastasis by Furukawa and Anzai[3] demonstrated a high sensitivity, but an extremely low specificity of 1-cm cutoff of the maximum axial diameter generally used in clinical practice.

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On the other hand, the size cutoff when using 1-cm minimum axial diameter was associated with moderate sensitivity and specificity and overall higher accuracy compared with that of the largest axial diameter. It might be because a pathologic node is round rather than oval-shaped, as Dr. Peter Som described in 1987.[4] Therefore, a short axial diameter reflects the presence of metastasis more accurately than a long axial diameter, as shown in a study by Steinkamp et al.[5]

However, it is customary to measure lymph nodes in a large axial diameter because that is how head and neck surgeons or oncologists palpate and document the size of nodal metastases. The goal of this survey was to access the practice variations, not to make any conclusion as to what is right or how we should measure lymph nodes. As expected, we found substantial variabilities as to how radiologists measure lymph nodes in clinical practice. The current CT allows visualization of a tumor or lymph node in any planes, as well as measurement of volume of tumor. I believe that how we measure and report tumor burden is an important question for all cancer imaging. Although we have no consensus, what is important is to understand perspectives of our colleagues of head and neck surgeons and oncology team. The authors would like to thank Dr. David Yousem for raising the interesting and important discussion.

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