Peer review file

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Comment 1: Authors should describe definitely a prefix “c” or “p” to clarify whether you intend for “clinical” or “pathological” TNM disease stage in the relevant part.

For example, Abstract, methods; T1a/b peripheral NSCLC -> pT1a/b peripheral NSCLC.

Materials and Methods; T1 -> pT1a/b

Figures 1and 2; T1N0M0 NSCLC (≤ 2 cm) -> pT1a/bN0M0

Tables 1,2 and 3; high grade T1N0 (≤ 2 cm) non-small cell lung cancer -> pT1a/bN0.

Reply 1: Thank you for the comment. We believe it is noteworthy to have separate 'clinical' and 'pathological' staging information available. Unfortunately, SEER database does not provide preoperative clinical staging. The T, N and M descriptors in the SEER database are pathological. We will add the prefix 'p' in all descriptors in the manuscript, as requested.

Comment 2: And also, authors should describe definitely a version of TNM classification (8th?) used in this report. Even though invasive size utilized in 8th TNM classification was unknown, pathological gross size can be generally comparable to pathological invasive size in these high grade tumors. Following paper discussed this point.

Sakakura N, Mizuno T, Kuroda H, et al. The eighth TNM classification system for lung cancer: A consideration based on the degree of pleural invasion and involved neighboring structures. Lung Cancer. 2018;118:134-138.

Reply 2: Thank you for sharing the reference. The SEER database does not include TNM eighth edition in their database. We have used separate TNM and size descriptors to construct our inclusion criteria, i.e. Tumor < 20 mm, N0,M0. Additionally, SEER provides detailed information regarding the cancer invasive characteristics, pertaining to pleural invasion, chest wall invasion etc. We diligently went through all the respective codes defining tumor invasiveness, and excluded such tumors. As such, we only included tumors that are ≤ 2 cm, and peripheral NSCLC. We will provide

additional details regarding our selection criteria for lung cancer staging.

Comment 3: I would like the authors to add information regarding pT1a and pT1b in Tables 1, 2, and 3.

Reply 3: Thank you for the comment. We have edited our tables accordingly.

Comment 4: I would like the authors to more discuss the reason for performing segmentectomy for the patients having these high grade tumors, though they commented the relevant information, such as patients' comorbidity, and respiratory function, etc., were lacked in the SEER database. Certainly, preoperative conclusive diagnosis for pathologic grades of the tumor is difficult. However, because these tumor usually shows radiologically solid in HRCT and high accumulation in PET-CT, oncologically appropriate surgical procedures can be discussed preoperatively in practice.

Reply 4: Thank you for the comment. As you mentioned we have already acknowledged the lack of preoperative clinical parameters (PFTs, comorbidity, functional status etc) signifying patients' tolerance for lobectomy as possible reasons behind performing segmentectomy. We also feel that discussing further complex preoperative tumor attributes such as solid vs part-solid or metabolic activity per PET/CT scan, is not helpful in the light of results from I-ELCAP investigators and recent study by Kamel and colleagues. Though the studies are not randomized, but have looked at these two specific parameters. Altorki and colleagues (I-ELCAP) demonstrated that sublobar resection and lobectomy have equal 10year survival (88% vs 84%) for solid ≤ 2 cm NSCLC. Kamel and colleagues have recently shown similar overall survival (92% vs 83%) and recurrence free survival (72% vs 69%) between lobectomy or segmentectomy for hypermetabolic (SUV > 3 g/dL) stage IA NSCLC. As such, in the light of these two very important studies, one could also argue that performance of segmentectomy for pure solid and/or hypermetabolic tumors in otherwise healthy patients is justifiable.

a) - Kamel et al. Segmentectomy Is Equivalent to Lobectomy in Hypermetabolic Clinical Stage IA Lung Adenocarcinomas. Ann Thorac Surg. 2019 Jan;107(1):217-223.

b) Altorki et al. Sublobar resection is equivalent to lobectomy for clinical stage 1A lung cancer in solid nodules. (J Thorac Cardiovasc Surg 2014;147:754-64)

Comment 5: Although main topic and the results in this study was interesting, some words, sentences, and expressions should be further revised as a scientific English paper for better readability. For example;

Abstract, results; significantly improved 5-year survival of 45.9 months vs 33.8 months for segmentectomy -> 45.9 % vs 33.8 %?

Reply 5: Thank you for your comment. We have adjusted accordingly.