

# Current trends in lung resection for T1a non-small cell lung cancer: is lobectomy still the answer?

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Comment on: Dai C, Shen J, Ren Y, *et al.* Choice of Surgical Procedure for Patients With Non-Small-Cell Lung Cancer  $\leq 1$  cm or  $>1$  to 2 cm Among Lobectomy, Segmentectomy, and Wedge Resection: A Population-Based Study. *J Clin Oncol* 2016;34:3175-82.

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In light of the proposed new T1 sub-classification for non-small cell lung cancer (NSCLC) tumors  $\leq 2$  cm by the International Association for the Study of Lung Cancer (IASLC), there is a need to better understand the role of sublobar resection in the surgical management of early stage NSCLC (1). In a recent study, published by the *Journal of Clinical Oncology*, Dai *et al.* analyzed SEER database to compare the outcomes of patients with NSCLC  $\leq 1$  cm and  $>1$  to 2 cm following lobectomy, segmentectomy and wedge resection (2). The authors showed improved overall and lung-cancer specific survival following lobectomy as compared to sublobar resections, irrespective of tumor size. On further analysis, they did not find significant survival differences between segmentectomy and wedge resections for tumors  $\leq 1$  cm. Though the statistics are compelling, these findings are in direct contradiction to previously published data from SEER database (3,4), which continues to fuel the controversy over the optimal use of sublobar resection for patients with T1a NSCLC tumors.

The landmark trial, Lung Cancer Study Group (LCCG) published in 1995 by Ginsberg and Rubinstein had established lobectomy as the standard of care for T1 NSCLC ( $\leq 3$  cm) (5). With recent advances in imaging technology and lung cancer screening program, identification of smaller tumors has increased considerably. Additionally, better understanding of tumor biology,

especially identification of histologic subgroups with relatively benign behavior and outcomes has raised the question whether lobectomy is too radical for early stage NSCLC. Traditionally, sublobar resections have been advocated as a “compromise” procedure for frail elderly patients with limited pulmonary reserve. An important question hence remains, whether sublobar resection is oncologically equivalent to lobectomy for early stage NSCLC in medically fit patients who would otherwise tolerate a lobectomy.

At present, there are two large prospective randomized trials, CALBG 140503 (U.S.) and JCOG0802/WJOG4607L (Japan) comparing sublobar and lobar resections for tumors  $\leq 2$  cm (6,7). Meanwhile there is substantial evidence in current literature with favorable arguments on both sides. Nonetheless there is an emerging trend with regards to select subset of patients who may benefit from “intentional” sublobar resections. In particular, patients with small, indolent tumors or advanced age may achieve equivalent survival benefits with sublobar resections.

Accurate staging of NSCLC requires adequate assessment of mediastinal and hilar lymph nodes. A careful evaluation of SEER and national cancer database (NCDB) has revealed an important variation in current surgical practices with regards to lymph node sampling. Our group and Khullar *et al.* have shown significant disparity

in lymph node sampling, with 41.5% (SEER) and 53.3% (NCDB) of patients undergoing lymph node sampling for sublobar resections for T1 tumors, as compared to 92.8% and 96.6%, respectively for lobectomy (3,8). This disparity raises another important question, whether the lack of lymph node sampling is falsely understaging some of these small tumors. It is also a possibility that lymph node sampling is a surrogate marker of patients' overall fitness for lung resection, where a minimalistic approach is undertaken without extensive lymph node sampling and/or dissection for poor risk patients. If so, this may represent a significant selection bias. Unfortunately, at this time these databases lack sufficient granularity to draw accurate conclusions regarding patient selection for lung resection.

National Cancer Comprehensive Network (NCCN) recommends at least a 2 cm resection margin or margin-tumor ratio of 1 or greater (9). Unlike anatomic resection with lobectomy, adequate resection margins are critical to achieve to prevent local recurrences following sublobar resection (10). Khullar *et al.* showed that after controlling for negative margins and adequate lymphadenectomy, overall survival after segmentectomy was equivalent to lobectomy for T1a tumors (8). As Dai *et al.* have pointed out, SEER database at present does not provide information regarding resection margin or ground-glass opacity (GGO) dominant tumors. Lack of these important determinants in multivariate analysis could potentially bias the results in favor of lobectomy.

Hence, as the results from ongoing prospective randomized trials are awaited, caution must be exercised while drawing any broad conclusions regarding the superiority of lobectomy over sublobar resections.

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### Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

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