

looked at the potential influence of tumor size on the type of resection (segmentectomy vs lobectomy) and found no significant differences. As always with retrospective studies, it is important not to over-read the lack of difference as equivalence, when it may simply reflect a lack of power.

Ultimately, the authors portray a contemporary update on the utility of surgery for the treatment of SCLC, and we congratulate them on their work. Among patients with SCLC in the NCDB, those who were treated surgically and received lobectomy did not appear to do better than those who received segmentectomy, but this conclusion must be tempered within the limitations of small sample size in the segmentectomy group and the dangers of type II error.

See Article page 1484.



## Commentary: Resection for small cell lung cancer should be offered more often, and preferably anatomical

Kevin Lim, MRCS (Edin), and  
Michael K. Y. Hsin, FRCS CTh (Eng)

Raman and colleagues from Duke reported a survival analysis of 1948 patients with cT1-2N0 small cell lung cancer (SCLC) who underwent lung resection from 2004 to 2015, by interrogating the National Cancer Database.<sup>1</sup> They compared survival after lobectomy with sublobar resection, which they categorized into segmentectomy and wedge resection (WR).

The key findings are (1) a survival advantage in favor of lobectomy and segmentectomy over WR, and (2) survival is equivalent between patients undergoing lobectomy and

From the Department of Cardiothoracic Surgery, Queen Mary Hospital, Hong Kong SAR, China.

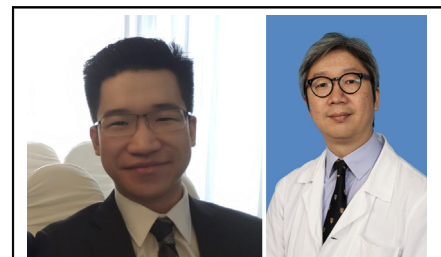
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Kevin Lim, MRCS (Edin), and Michael K. Y. Hsin, FRCS CTh (Eng)

### CENTRAL MESSAGE

Surgery for early-stage SCLC is underused. Early results suggest segmentectomy may have equivalent survival compared with lobectomy. Wedge resection fared no better than chemoradiation.

segmentectomy. In a propensity-matched comparison of patients undergoing lobectomy and segmentectomy, survival equivalency held true.

In a subgroup analysis comparing surgery and definitive chemoradiation, survival after lobectomy was superior to chemoradiation, but WR fared no better than

chemoradiation. The authors attributed the absence of survival benefits for patients undergoing segmentectomy to type II error because of the small numbers in the segmentectomy subgroup.

Disappointingly, surgery was performed in only 22.2% of the 10,033 patients with cT1-2N0 who were analyzed. The unfavorable results of early randomized trials (the Medical Research Council and Lad and colleagues' trials) likely contributed to underuse. However, in these early studies, patients with advanced disease and hilar tumors and bulky mediastinal lymphadenopathy were included and resulted in unacceptable surgical morbidity, mortality, and early recurrence.<sup>2-4</sup>

In the past decade, publications based on national cancer registries showed encouraging surgical outcomes for appropriately selected patients with SCLC.<sup>5,6</sup> The use of tumor-node-metastasis staging in these registries focused the discourse on the small subset of truly early-stage patients who may benefit from surgery. These results led to a shift in attitude, reflected in the current American College of Chest Physicians and National Comprehensive Cancer Network guidelines.<sup>7,8</sup>

The Duke study confirmed the benefits of anatomical resection. However, readers should be aware of potential confounders regarding the nonanatomical resection subgroup.

1. The National Cancer Database does not record the rationale for offering WR. It is unclear how many WR were done as diagnostic procedures as opposed to definitive surgery and whether WR was offered because of limited lung reserve or other comorbidities that may affect survival.
2. In this study, many patients undergoing WR had positive margins. Even for margin-negative WR, the adequacy of the resection margin is unclear. The literature on sublobar resection for non-small cell lung cancer emphasized the importance of a margin of 2 cm to reduce locoregional recurrence.
3. Patients undergoing WR had significantly fewer lymph nodes sampled compared with patients undergoing segmentectomy and lobectomy (many had none sampled) and highlights the issue of nodal upstaging.

The number of patients undergoing segmentectomy in the Duke study is small, and the oncologic efficacy of segmentectomy for early-stage SCLC requires further validation. Segmentectomy for cT1a non-small cell lung cancer garnered tremendous interest in the past decade, because ground glass tumors less than 2 cm represent a unique class of adenocarcinomas with a limited potential for intralobar spread and regional metastases.<sup>9</sup> More research is needed to clarify the role of intentional anatomical sublobar resection in early-stage patients with SCLC and sufficient reserve to undergo a lobectomy.

The Duke study underscores the underuse of surgery in early-stage SCLC and reaffirms the importance of guideline-concordant anatomical resection as part of the multimodality therapy for SCLC.

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