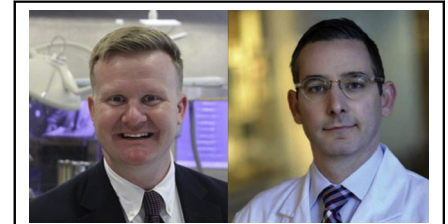


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Commentary: At the intersection of biology and anatomy: Segmentectomy

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Tumor size has long been used as a surrogate for tumor biology and, “by in large,” malignancies of greater size are more likely to relapse following resection. Reciprocally, surgeons and practitioners (too often) encounter small tumors that have unexpected malignant potential. In the field of non–small cell lung cancer (NSCLC), this outlier-replete trend in the relationship between size and biology is not dissimilar to our outlier-replete understanding of the relationship between size and extent of pulmonary resection.

Based on best-available evidence, now 27 years old, lobectomy is considered by most to be the standard operative therapy for the majority of early-stage NSCLC tumors (3 cm or smaller in this Lung Cancer Study Group trial).¹ The decreased rates of locoregional recurrence following lobectomy compared with sublobar resection are believed, at least in part, to be a result of the improved “anatomic” resection of intraparenchymal draining lymphatics and vascular channels afforded by lobectomy, particularly when compared with the nonanatomic wedge resection. That said, the practicing thoracic surgeon routinely wonders whether the sacrifice of certain extents of normal parenchyma is truly necessary for a small peripheral lung cancer that is amenable to sublobar resection.

It is clear that we are entering a new era of parenchymal-sparing anatomic resection; however, our supporting

CENTRAL MESSAGE

As we await potentially practice-changing randomized data, Peng and colleagues investigate the size limit for segmentectomy and keep in check the natural tendency of innovation to faceoff with biology.

evidence is retrospective and nonrandomized, and, in balance, supports equivalency in survival outcomes between segmentectomy and lobectomy for tumors less than 2 cm in size.² Highly anticipated are forthcoming peer-reviewed data from 2 multicenter, phase III randomized trials that may be rigorous enough to transform clinical practice—the CALGB/ALLIANCE 140503³ and the JCOG0802/WJOG4607L trial.⁴ In the interim, we serve a field with a well-deserved reputation for innovation and that is appropriately seeking to define tumor size limits for segmentectomy.

In this issue of the *Journal*, Peng and colleagues⁵ present a National Cancer Database (NCDB) study that demonstrates that segmentectomy was associated with inferior survival compared with lobectomy in patients with early-stage NSCLC >2 cm but <4 cm. The sample size and national footprint of the NCDB provide a strong platform to begin to tackle this question but are accompanied by selection bias limitations of the NCDB that are now very familiar to the readership. Nonetheless, the authors should be applauded for their application of rigorous statistics to overcome, to the extent possible, such limitations to investigate truths. It is a certainty that we need to advance our basic understanding of the biologic elements that bridge the intersection of size and of tumor aggressiveness. In the meantime, we appreciate the work of Peng and colleagues as

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one that should limit the natural tendency for innovation to try to outpace standards of care.

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