Commentary: To wedge, or not to wedge, that is the question

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**Word Count:** 530

**Disclosures:** ICONA (co-founder), Astra Zeneca (consultant), OncLive (speaker), IDEOlogy Health (moderator)

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Central Message: As recent trials suggest that wedge resection may be appropriate for early lung cancers, more granular studies are urgently needed to guide safe patient selection.

Central Picture Legend: Jane Yanagawa, MD

NYTimes Magazine recently published an article entitled, “Suddenly, It Looks like We’re in a Golden Age for Medicine,”1 which could certainly describe the exponential progress in lung cancer treatment. However, times of change require a great deal of attention to avoid missteps. For example, although the results of CALGB/Alliance 1405032 established non-inferiority of sublobar resection to lobectomy for small peripheral lung cancers, it also raised many questions. As Dr. Haiquan Chen and his team ask in this JTCVS publication, the primary question on everyone’s mind is: when is a wedge resection acceptable?

The authors assert that wedge resection for subsolid lesions <2 cm with consolidation-tumor ratio (CTR) <0.25 -- most of which represent adenocarcinomas in situ and minimally invasive adenocarcinomas -- is widely accepted as appropriate treatment based on prior studies4. But they raise the question of whether wedge resections are adequate when lesions are incrementally denser (CTR 0.25-0.5) and/or larger (2-3
cm), representing pathologically invasive adenocarcinomas. The study is a retrospective review of a single institution's experience of sublobar resections performed for small subsolid lung adenocarcinomas. They demonstrate equivalent results of wedge resection and segmentectomies for lesions <2 cm/CTR <0.5, but increased recurrence rates with wedge resections for lesions 2-3 cm/CTR<0.5. The authors conclude that wedge resections are acceptable for lesions <2 cm/CTR <0.5, but segmentectomies are preferable for lesions 2-3 cm/CTR <0.5 as well as for any lesion (even <2 cm) with CTR >0.5.

This study has significant weaknesses related to the retrospective nature of the study, including selection bias and small numbers. In addition, a concern related to any study involving wedge resections is quality control for the procedure. The authors state that all surgeons involved in the study perform wedge resections aiming to achieve a resection margin distance greater than 2 cm. However, this was not confirmed by pathology review. In addition, an aspect of the study that could limit its applicability to clinical practice may be the reliance on the assessment of CTR to determine extent of resection. At many institutions, radiology reports may include measurement of a solid component in the description of a subsolid lung lesion or a comment on ground-glass dominance but do not provide a CTR.

However, studies like this one shed valuable light on how surgical resection needs to be tailored to the biological spectrum of lung adenocarcinoma. Ultimately, the study both encourages (for <2cm/CTR <0.5) and discourages (2-3 cm/CTR <0.5, any lesion
CTR >0.5) surgeons from performing wedge resections, and the key message is that the decision for extent of resection will likely need to be based on more criteria than just size and peripheral location. Also, as we gather more data, focus on quality metrics that include details of treatment impact on quality of life will become increasingly important for differentiating between sublobar options. For example, although there was a difference in recurrence rate in the wedge versus segmentectomy groups for the 2-3 cm/CTR <0.5 lesions, there was no significant difference in lung cancer specific overall survival. The added complexity of balancing concerns of overtreatment and undertreatment are the luxury of dealing with a more survivable cancer and better tools in this golden age of lung cancer surgery.

References


