You would think that thoracic surgeons have plenty to consider when planning for a lung cancer resection in 2013. We have been bombarded with “the small nodule” less than 2 cm, which we have learned can have various inhomogeneities in its computerized tomographic (CT) analysis (1); we have to decide whether the nodule merits a lobectomy (the standard of care) or a sublobar resection (2) (for those heretics in the minority who feel that we don’t need a randomized trial to answer the sublobar vs lobectomy debate); whether we should mark the nodule preoperatively so we will be able to find it because we are sometimes trying to feel a 2-cm sponge within a giant sponge; and whether to perform the case as a video-assisted resection, a robotic resection, or (shudder) as an open procedure with rib resection/spreading. As if those deliberations were not enough, now we must start to worry about whether the (presumed lung cancer) solid or part-solid nodule presented to us on the CT scan has a critical quantifiable element of micro-papillary disease, which may be associated with tumor recurrence if we do a wedge resection or a segmentectomy (which, of course, will only be the standard of care for intentional lung cancer resections if this is confirmed by the results of CALGB 140503 “A Phase III Randomized Trial of Lobectomy Versus Sublobar Resection for Small (<2 cm) Peripheral Non–Small Cell Lung Cancer” (3).

The article by Nitadori et al. (4) in this issue of the Journal is a continuation of the milestone publications by the International Association for the Study of Lung Cancer/American Thoracic Society/European Respiratory Society, which have revolutionized the pathologic classification of lung adenocarcinoma (5). As reviewed by Sub (6), the new classification eliminates the categories of bronchioloalveolar carcinoma and mixed subtype adenocarcinoma to achieve precise correlations between predominant histologic subtypes of lung adenocarcinoma and survival in surgically resected patients. The Nitadori et al. article (4) retrospectively analyzed 476 lobectomies and 258 limited resections (either by wedge resection or anatomic segmentectomy) at a single institution in patients with lung adenocarcinomas of 2 cm or less. An important validation of the prognostic importance of the new classification system was demonstrated in the patients who had lobectomies for these small tumors; however, this was not seen in the limited resection group. Why is this? Is it because of the heterogeneity of the procedures performed? Is it because of the absence of clear-cut large margins? There are some other intriguing aspects of the limited resection group in these patients that also should be mentioned. The authors specify that the limited resection group is a combination of compromised (77.1%) patients and patients...
having intentional resection by less than a lobectomy (22.9%). The literature has documented that wedge resections performed in this population have a substantially higher incidence of local recurrence (7,8); yet, in this series the wedge resections (which were 2.6-fold more frequent than segmentectomies) did not reach statistical significance with regard to the cumulative incidence of recurrences compared with segmentectomies. One could speculate that this lack of recurrences in the wedge resection group was because of larger than average margins taken at the time of resection; however, another interesting finding in this series is that the size of the margin in the sublobar resection group did not influence the cumulative incidence of recurrence. This lack of margin size influence is also disturbingly different from publications comparing wedge resection to segmentectomies when margin distance was a predictor of recurrence and stipulations such as having a margin at least the diameter of the tumors diameter were suggested (9).

Specifically relevant to the Nitadori et al. study (4) is the relationship of the micropapillary component of the lung cancer to the possibility of recurrence in the sublobar cohort. There is no doubt that micropapillary-predominant adenocarcinoma, characterized by tumor cells growing in papillary tufts that appear to be detached or connected to alveolar walls, is associated with recurrence. The novel finding reported herein is that in the sublobar group, the presence of a 5% or greater micropapillary component was associated with a statistically significantly greater chance of local recurrence, especially if the margin was less than 1 cm. In other words: Surgeon beware of sublobar resection when there is a clinically significant micropapillary component. Or is the warning really: Surgeon beware of a wedge resection for part solid small lung cancer nodules. What we really don’t know is whether the 5% or greater micropapillary component was weighted toward patients who had a wedge resection instead of a segmentectomy because the sublobar resections are lumped together. In fact, in the discussion, Nitadori et al. states, “Given our findings, patients treated with LR [limited resection] whose tumors are determined to have MIP [micropapillary] morphologic pattern by use of permanent sections may require completion segmentectomy or LO [lobectomy]” (4). Segmentectomy would only salvage previous wedge resections, but the data presented do not specify whether segmentectomies are equally guilty of a higher cumulative incidence of recurrence than lobectomies. So, as a thoracic surgeon, how does this paper affect my practice? Without a doubt, this contribution emphasizes the higher propensity for certain histologic variants of adenocarcinoma to recur, although we really did not get a full breakdown of the other types (ie, solid). How does it affect my planning for patients in whom I would perform an intentional sublobar resection? Well, preoperatively, I would need to know whether I have any clues that there is a micropapillary component to the 2-cm tumor. I am sure that in the future, with further improvements in pixilation, texturing, and interpretation of these small lesions, CT or nuclear studies may help me in that regard (10). Frankly, however, at present, that is irrelevant to me if the appearance is solid or part solid on the CT scan because those patients should not receive a wedge resection (especially with compromised margins) for elective lung cancer surgery except as the preliminary wedge for intraoperative diagnosis. If the lesion is not peripherally located (another element that must be considered before resection), performing a wedge resection with comforting margins is sometimes difficult. Moreover, the authors state that “reporting the presence of MIP morphologic pattern on frozen sections is not the standard of care, with histopathologic confirmation occurring only by use of permanent sections” (4). Therefore, rather than trying to perform a “salvage segmentectomy or lobectomy” (4), it is my responsibility to get the first operation right, and in 2013, for intentional resections of lung cancer, the only place for a definitive wedge in the intentionally treated lung cancer is in situ carcinoma, leaving all the rest of the lesions for segmentectomy and lobectomy (with lymph node sampling/dissection, of course). One should not underestimate the importance of the message of this article: not all lung cancer subtypes are the same or act the same, even in the new classification, and the subtypes may impact loco-regional management. Finally, it will be extremely interesting to see these data reanalyzed as part of the final report of the CALGB 140503 not only to examine micropapillary recurrence incidence in early lung cancer surgery but also to see how all the rest of the histotypes (excluding in situ) also could affect surgical decisions.

**References**


**Notes**

The author has no conflicts of interest to declare.

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