Commentary: Lobectomy, segmentectomy, or wedge resection for stage IA lung cancer: Several choices, many questions

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During the past year, 2 multicenter randomized clinical trials, 1 from Japan and the other coordinated by the Alliance Group in North America, have established new standards of surgical care for early stage (T1a-b N0 M0, stage IA) non–small cell lung cancer (NSCLC).1,2 Although the trials differed somewhat in design, size, and end points, both showed that sublobar resection was noninferior to lobectomy for primary tumors measuring 2 cm or less in size. These findings supersede the standard set in 1995 by the Lung Cancer Study Group 821 trial, which reported better outcomes after lobectomy for T1 N0 M0 NSCLC measuring up to 3 cm in size.3 A post hoc analysis of the Alliance trial compares outcomes after segmentectomy vs wedge resection and finds no significant differences between these 2 approaches.4 The Japanese trial compared lobectomy with segmentectomy and thus shed no light on the use of wedge resection. So, what approach should a thoracic surgeon choose?

Post hoc analyses have many limitations. However, as stated by the authors, in the absence of further randomized trials, their results can be considered the best evidence that there are no significant differences in oncological outcomes between segmentectomy and wedge resection in this subset of patients with NSCLC. The obvious risk is that failure to adhere to stringent trial standards for patient selection, parenchymal margins, and nodal staging will lead to higher rates of recurrence. Surgeons have the responsibility of maintaining these strict standards for sublobar resections in routine practice. In fact, improving systemic therapy options (immune checkpoint inhibitors and targeted therapies) now make it important that surgeons perform a more extensive removal of N1 lymph nodes than was required in the Alliance trial to ensure that patients are appropriately referred for potentially curative adjuvant treatment.

During the past 15 years, it has become clear that outcomes are not related solely to primary tumor size. Refinement of the histological classification of lung adenocarcinomas in the 2011 article on proposed histological classification of lung adenocarcinomas led to the recognition of differences in behavior of histological subtypes, with some (eg, micropapillary) presenting a greater risk of local recurrence after sublobar resection and others (eg, solid) exhibiting a greater risk of systemic progression.5,6 These clinical and pathological features correlate with differences in underlying tumor genomics.7 The design of the Japanese and Alliance trials predate this information and provide only radiologic and clinical characteristics. Thus, surgeons are still left with difficult, individualized decisions about whether to perform a lobectomy, segmentectomy, or wedge resection depending on tumor size, location, and radiological characteristics; medical...
comorbidities; and pathological and molecular features, if available from a preoperative biopsy. Despite the results of the Japanese and Alliance trials and this post hoc analysis, there are still many unanswered questions regarding the choice of operation. Additional studies correlating clinical outcomes with pathological and molecular features are needed.

References


