

Peer Review File

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Reviewer A

Comment 1: This is an excellent review of a very controversial and clinically pertinent question - namely in the era of sublobar resection for lung cancer what constitutes an appropriate margin length? The authors rightly highlight that though the preponderance of published data suggests that margin length correlates to recurrence, what exactly is an appropriate margin length is unclear. I also appreciate the relatively brief comments regarding margin length in the setting of GGO and STAS.

I think a couple of points could be addressed to improve the strength of the conclusions - given that the authors suggest that STAS + tumors could perhaps be best served with a larger margin length, how do they in their own institution handle this clinical scenario? Do they routinely ask for STAS to be commented upon on pre-resection biopsy or intra-operative frozen sectioning? If not, then post hoc evaluation of STAS+ and margin length is less compelling.

Reply: Thanks for your insightful comments. Diagnosing STAS preoperatively or intraoperatively might be challenging. Several papers discussing this issue demonstrated that definitive diagnosis of STAS in preoperative biopsy samples or frozen specimens were difficult. Thus, STAS should be confirmed in the postoperative pathological findings, and completion lobectomy should be taken into consideration for patients with STAS at present because what exactly is an appropriate margin distance is uncertain for this type of lung cancer. We added some comments and references in discussion part (see Page 14-15, line 279-286).

Changes in the text: In addition, preoperative or intraoperative diagnosis of STAS is challenging. *Cao et al.* examined 111 preoperative percutaneous transthoracic needle biopsy specimens and subsequent resection specimens, showing that only six biopsy specimens were suspected to be STAS-positive among 36 lung adenocarcinoma with STAS confirmed by the subsequent resection specimens (25). *Kamada et al.* reported that STAS could be identified in frozen sections intraoperatively with a sensitivity and specificity of 71% and 92%, respectively (26). At present, therefore, definitive diagnosis of STAS should be done in the postoperative pathological findings, and completion lobectomy should be taken into consideration for patients with STAS.

Comment 2: Is it the authors practice that wedge resection with an appropriate margin

is equivalent to segmentectomy? Why or why not?

Reply: Thank you for your question. Several papers selected in this review showed that which type of surgery, wedge resection or segmentectomy, was not a significant risk factor for recurrence (12, 19, 20). In addition, other papers suggested that a surgical margin of >10 mm or M/T of >1 might be necessary to prevent recurrence regardless of wedge resection (7, 11, 15) or segmentectomy (9, 17, 18). That is why we reckon that appropriate surgical margin distance required in wedge resection and segmentectomy might be the same. On the other hand, a few studies cautioned that insufficient surgical margin were seen more frequently in wedge resection than in segmentectomy, leading to locoregional recurrence (10,12). Thus, segmentectomy or lobectomy should be performed when a surgical margin distance obtained in wedge resection is considered to be inappropriate. We added some comments in discussion part (see Page 14, line 266-274).

Changes in the text: We reckon that appropriate surgical margin distance required in wedge resection and segmentectomy might be the same. Several papers selected in this review showed that which type of surgery, wedge resection or segmentectomy, was not a significant risk factor for recurrence (12, 19, 20). In addition, other papers suggested that a surgical margin of >10 mm or M/T of >1 might be necessary to prevent recurrence regardless of wedge resection (7, 11, 15) or segmentectomy (9, 17, 18). On the other hand, a few studies cautioned that insufficient surgical margin were seen more frequently in wedge resection than in segmentectomy, leading to locoregional recurrence (10,12). Thus, segmentectomy or lobectomy should be performed when a surgical margin distance obtained in wedge resection is considered to be inappropriate.

Reviewer B

The results of recently published studies indicate that segmentectomy may be a good alternative to lobectomy. For this reason, an increase in the number of segmentectomies performed should be expected. However, segmentectomies may be associated with a higher risk of local recurrence, especially when the surgical margin is insufficient. In their study, the authors analyze these issues very carefully, which makes the article very important for thoracic surgeons.

The research methodology is correct. The authors included current, clinically relevant scientific articles in the study. The analysis is carried out in great detail and each article is thoroughly discussed. The conclusions drawn by the authors are supported by the literature discussed and are clinically important. The quality of the English language is very good.

Reply: Thank you.