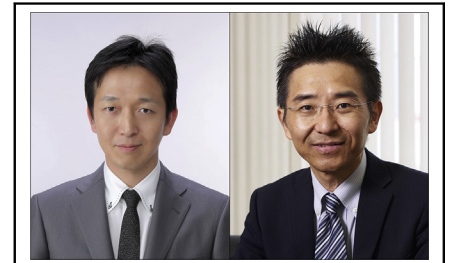


See Article page 207.



## Commentary: Segmentectomy as a standard surgery, a new era in small sized, peripheral, non-small cell lung cancer

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### CENTRAL MESSAGE

Anatomical segmentectomy with hilar and mediastinal lymph node dissection should be standard surgery for NSCLC  $\leq 2$  cm with a C/T ratio  $>0.5$ , ie, solid predominant features, on HRCT images.

One definitive answer to the clinical question as to whether patients with early-stage, non-small cell lung cancer (NSCLC)  $\leq 2$  cm should be treated by segmentectomy or lobectomy has transpired from a prospective randomized trial conducted by the Japanese Clinical Oncology Group 0802 (JCOG0802)/West Japan Oncology Group 4607L (WJOG4607L).<sup>1,2</sup> The results of this clinical trial indicated that radical anatomical segmentectomy with hilar and mediastinal lymph node dissection should be the standard surgical procedure for peripherally located NSCLC  $\leq 2$  cm with a consolidation to tumor ratio  $>0.5$ , eg, solid predominant features on high-resolution computed tomography images. Moreover, the ongoing JCOG1211 and Cancer and Leukemia Group B (CALGB) 140503 trial will disclose additional information about segmentectomy for patients with early-stage NSCLCs.<sup>3,4</sup> Thus, segmentectomy is a key surgical procedure that general thoracic surgeons will need to master as the frequency of detecting small NSCLC continues to increase.

Considering the size of a whole tumor rather than only the solid part and central or peripheral location is important for securing a surgical margin to avoid local recurrence after segmentectomy.<sup>5</sup> In addition, segmentectomy has

many procedural variations, such as the subsegmentectomy described by Liu and colleagues.<sup>6</sup> Therefore, surgeons will need to understand the anatomical profiles of the pulmonary artery/vein and the bronchus as well as the size and location of tumors.

Methods of separating the intersegmental plane mainly comprise cautery and stapling; the latter was selected in the reported case. Cautery is more effective than stapling for postoperative lung expansion, whereas staples are more effective against postoperative air leakage, especially for patients with emphysema or interstitial pneumonia. If pulmonary status is normal as in the reported case, then cautery is also appropriate for separating lung parenchyma. Separating the anatomically correct intersegmental or -subsegmental plane with cautery minimizes blood loss and air leakage for subsegmentectomy as well as segmentectomy. Regarding lung parenchyma separation on the intersegmental plane, the pulmonary vein is a key structure that functions as a drainage vessel for the lung. Only the pulmonary vein from a resected lung segment needs to be cut to avoid residual lung congestion. Therefore, the pulmonary vein should be cut and lung parenchyma should be separated during the last part of surgical procedure. Although the report includes an excellent surgical video, surgeons must be aware of the underlying possibility that the disorientated pulmonary vein could be cut. The report mentions in the Discussion section that the subsegmental hili of

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S9b/10b are not easy to approach through the interlobar fissures. However, not only because the pulmonary vessels and the bronchus can be easily identified from the transinferior ligament view, identification from various directions including the interlobar fissure view is also important without regard for the transinferior ligament approach.

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