



Resect a little, resect more, irradiate or ablate—what is the best approach?

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Detterbeck FC, Mase VJ Jr, Li AX, *et al.* A guide for managing patients with stage I NSCLC: deciding between lobectomy, segmentectomy, wedge, SBRT and ablation-part 2: systematic review of evidence regarding resection extent in generally healthy patients. *J Thorac Dis* 2022;14:2357-86.

Bade BC, Blasberg JD, Mase VJ Jr, *et al.* A guide for managing patients with stage I NSCLC: deciding between lobectomy, segmentectomy, wedge, SBRT and ablation-part 3: systematic review of evidence regarding surgery in compromised patients or specific tumors. *J Thorac Dis* 2022;14:2387-411.

Park HS, Detterbeck FC, Madoff DC, *et al.* A guide for managing patients with stage I NSCLC: deciding between lobectomy, segmentectomy, wedge, SBRT and ablation-part 4: systematic review of evidence involving SBRT and ablation. *J Thorac Dis* 2022;14:2412-36.

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Detterbeck *et al.* have presented a comprehensive 4-part analysis and review of the literature supporting the various operative approaches (lobectomy, segmentectomy, wedge resection) and non-operative approaches for stage I non-small cell lung cancer (NSCLC) (1-4). The literature search was focused over the last 21 years. During this time, there has been increased adoption and development of minimally invasive surgery approaches, a pendulum swing back towards sublobar resection for small-size lung cancers, and vigorous debate about the role of stereotactic body radiotherapy (SBRT) for operable patients. The authors only included randomized controlled trials (RCTs) and non-randomized comparisons (NRCs), as long as the NRCs had 50 or more patients in each arm and some adjustment for confounders. With predominantly NRC data available, there are challenges to extrapolate the results into clinical practice, however we feel that this was thoroughly presented by the authors. An interesting approach that the authors took, was rather than performing a quantitative meta-analysis, they constructed tables, addressing the impact of confounding factors and the effect of the treatment on their outcome of interest using color coding and a scale from very high confidence to low confidence. Additionally, to

portray the data, heat maps with colors ranging from green to red highlighted meaningful improvement *vs.* meaningful worsening effect of the evidence.

A drawback that the authors acknowledge, is that a large body of the evidence includes patients that underwent open surgery via thoracotomy. Current trends in thoracic surgery are shifting to minimally invasive surgical (MIS) techniques as the predominant approach to pulmonary resection and, as they emphasize, MIS resection has been associated with improved outcomes such as reduced morbidity, postoperative quality of life (QOL), recovery and pain control.

Sublobar resection versus lobectomy has long been a topic of intense debate. The evidence has been variable between NRCs with little prospective data to clearly support one technique over the other. Issues with NRCs partly stems from the difficulty to control for confounders even with propensity matching. Many of the large databases that are often utilized, lack details such as the percentage of ground glass opacity (GGO) lesions, Charlson comorbidity index, and the extent of sublobar resection (wedge *vs.* complex segmentectomy *vs.* single segmentectomy). It is of note that after this review was published, Dr.

Altorki presented the primary outcome results of the CALGB 140503 randomized trial of lobectomy versus segmentectomy (5) at the 2022 World Conference of Lung Cancer (World Conference in Lung Cancer 2022, Vienna, Austria). In this landmark study, patients with clinical stage 1 tumors (2 cm or less) were randomized after confirming that at least two mediastinal and 1 hilar nodal stations were negative on frozen section. Interestingly, overall survival and recurrence-free survival were the same. Of note, over 50% of patients had wedge resection. Their results support the role of sublobar resection for these small stage I cancers, and argue that wedge resection may in fact be a good option in these good-risk patients, who would otherwise have been offered lobectomy.

Another hot-button topic has been that of using SBRT for operable patients. Detterbeck *et al.* provided a good overview of the literature on this topic, pointing out that although short-term outcomes are meaningfully better after SBRT compared to resection, there is a detriment with time. The short-term benefits of SBRT are accentuated in high-risk patients and can't be extrapolated to patients with long-life expectancy. Additionally, several NRC's have demonstrated improved overall survival with surgery compared to SBRT. It is hoped that the ongoing randomized STABLEMATES (6) and VALOR (7) trials will help shed light on this issue.

In conclusion, we feel this series was thoughtfully constructed and effectively presented the large breadth of data available. With advances in transbronchial ablation and increasing usage of MIS approaches, the field of thoracic surgery continues to change, and ongoing prospective studies will be needed to further guide clinicians as they select the best therapy for their patients with lung cancer.

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