Editorial Commentary

Therapeutic strategy for lung adenocarcinoma with pure ground-glass opacity: surgery, radiotherapy, or watchful waiting?

Masanori Shimomura^, Masayoshi Inoue

Division of Thoracic Surgery, Department of Surgery, Kyoto Prefectural University of Medicine, Kyoto, Japan

Correspondence to: Masanori Shimomura, MD, PhD. Division of Thoracic Surgery, Department of Surgery, Kyoto Prefectural University of Medicine, 465 Kajii-cho, Kamigyo-ku, Kyoto 602-8566, Japan. Email: mshimomu@koto.kpu-m.ac.jp.

Comment on: Li D, Deng C, Wang S, *et al.* Ten-Year Follow-up Results of Pure Ground-Glass Opacity-Featured Lung Adenocarcinomas After Surgery. Ann Thorac Surg 2023;116:230-7.

Keywords: Early-stage lung cancer; ground-glass opacity (GGO); sublobar resection

Submitted Oct 28, 2023. Accepted for publication Dec 18, 2023. Published online Jan 15, 2024.
doi: 10.21037/jtd-23-1633
View this article at: https://dx.doi.org/10.21037/jtd-23-1633

Ground-glass opacity (GGO) is often detected on chest computed tomography (CT) during medical screening or during the examination for other diseases, and the treatment strategy for GGO is the topic of debate. Due to the location of the tumour and its small size, transbronchial lung biopsy or CT-guided needle biopsy is difficult to perform, and follow-up is often the first step. In the European guidelines for the surgical management of pure GGOs, nodules less than 6 mm are recommended for no routine follow-up while nodules more than 6 mm are recommended for observation every 2 years until 5 years. If solid components or growth develops, resection is considered (1). Obayashi *et al.* reported that the volume doubling time of lung adenocarcinoma with GGO was significantly longer than that without GGO (725 *vs.* 177 days), indicating that GGO lesions tend to grow slowly over many years (2).

Radiotherapy is a treatment option for low-risk patients, and the usefulness of stereotactic body radiotherapy (SBRT) has been reported (3,4). However, it is difficult to make a definitive diagnosis of lung cancer before treatment because of small nodules, as mentioned above. SBRT is disadvantageous in that a definitive diagnosis of lung cancer cannot be made before treatment in many cases, so treatment is probably performed with an undetermined diagnosis, and posttreatment changes appear on images after radiotherapy, making it difficult to evaluate whether recurrence or posttreatment changes have occurred.

Surgical treatment is the first choice for patients who can tolerate surgery. In recent years, the usefulness of intensive sublobar resection for small lung cancer has been reported, and the prognosis of segmentectomy is better than that of lobectomy (5). In addition, the 5-year recurrence-free survival rate of partial lung resection for peripheral GGO-dominant lesions with a consolidation tumour ratio (CTR) <0.25, which is the diameter of the tumour's substantial component divided by the overall diameter, was 99.7%, which is a good result (6).

In the article reported by Li *et al.* in this study (7), 308 lung adenocarcinomas showing pure GGO were operated on, and the prognosis was assessed at the follow-up visits for 10 years. The 10-year recurrence-free survival rate was 100%, which was very good. One hundred and twenty-one lobectomies were performed (39.3%) and 187 sublobar resections were performed (60.7%). There was no difference in the 10-year recurrence-free survival rate between lobectomy and sublobar resection despite 21.6% of patients having pathologically invasive components. The 173 patients who underwent wedge resection had no recurrence, which is surprising. The good results may be attributed to sufficient surgical margins.

^ ORCID: 0000-0002-5099-9479.

Spread through air spaces (STAS) has recently been mentioned as a new pattern of pulmonary tumour extension; it has been shown to be a poor prognostic factor and a risk factor for margin recurrence in patients with lung metastases of colorectal cancer (8) and a strong prognostic factor in patients with lung cancer (9,10). We previously demonstrated that STAS was positive in 13.8% of stage I lung adenocarcinomas with a CTR <0.5, suggesting that it is important to ensure adequate margins for resection of lung cancer (10).

Li *et al.* also reported that secondary primary lung cancer (SPLC) was observed in 2.2% of patients, and the rate at which sublobar resection is performed has been increasing since 2011 (7). Surgical treatment of pure GGO is expected to increase in the future, and this study by Li *et al.* is an important contribution to this trend.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Journal of Thoracic Disease*. The article has undergone external peer review.

Peer Review File: Available at https://jtd.amegroups.com/article/view/10.21037/jtd-23-1633/prf

Conflicts of Interest: Both authors have completed the ICMJE uniform disclosure form (available at https://jtd.amegroups.com/article/view/10.21037/jtd-23-1633/coif). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

References

1. Cardillo G, Petersen RH, Ricciardi S, et al. European guidelines for the surgical management of pure ground-glass opacities and part-solid nodules: Task Force of the European Association of Cardio-Thoracic Surgery and the European Society of Thoracic Surgeons. Eur J Cardiothorac Surg 2023;64:ezad222.
2. Obayashi K, Shimizu K, Nakazawa S, et al. The impact of histology and ground-glass opacity component on volume doubling time in primary lung cancer. J Thorac Dis 2018;10:5428-34.
3. Mikami N, Takeda A, Hashimoto A, et al. CT Findings and Treatment Outcomes of Ground-Glass Opacity Predominant Lung Cancer After Stereotactic Body Radiotherapy. Clin Lung Cancer 2022;23:428-37.
4. Jang JY, Kim SS, Song SY, et al. Clinical Outcome of Stereotactic Body Radiotherapy in Patients with Early-Stage Lung Cancer with Ground-Glass Opacity Predominant Lesions: A Single Institution Experience. Cancer Res Treat 2023;55:1181-9.
5. Saji H, Okada M, Tsuboi M, et al. Segmentectomy versus lobectomy in small-sized peripheral non-small-cell lung cancer (JCOG0802/WJOG4607L): a multicentre, open-label, phase 3, randomised, controlled, non-inferiority trial. Lancet 2022;399:1607-17.
6. Suzuki K, Watanabe SI, Wakabayashi M, et al. A single-arm study of sublobar resection for ground-glass opacity dominant peripheral lung cancer. J Thorac Cardiovasc Surg 2022;163:289-301.e2.
7. Li D, Deng C, Wang S, et al. Ten-Year Follow-up Results of Pure Ground-Glass Opacity-Featured Lung Adenocarcinomas After Surgery. Ann Thorac Surg 2023;116:230-7.
8. Takeda-Miyata N, Konishi E, Tanaka T, et al. Prognostic significance of spread through air spaces in pulmonary metastases from colorectal cancer. Lung Cancer 2020;149:61-7.
9. Han YB, Kim H, Mino-Kenudson M, et al. Tumor spread through air spaces (STAS): prognostic significance of grading in non-small cell lung cancer. Mod Pathol

2021;34:549-61.
10. Shimomura M, Miyagawa-Hayashino A, Omatsu I, et al. Spread through air spaces is a powerful prognostic predictor in patients with completely resected pathological stage I lung adenocarcinoma. Lung Cancer 2022;174:165-71.

Cite this article as: Shimomura M, Inoue M. Therapeutic strategy for lung adenocarcinoma with pure ground-glass opacity: surgery, radiotherapy, or watchful waiting? J Thorac Dis 2024;16(1):804-806. doi: 10.21037/jtd-23-1633