



## Two Decades of Pulmonary Metastasectomy for Leiomyosarcoma in Essen

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The authors should be congratulated for this paper entitled “Prognostic Factors for Leiomyosarcoma With Isolated Metastases to the Lungs: Impact of Metastasectomy.”<sup>1</sup> In this paper, the authors describe several important findings based on nearly 2 decades of their experience in surgical and non-surgical management of patients with pulmonary metastases from leiomyosarcoma.

First, it is notable that the authors focused on pulmonary metastases from leiomyosarcoma, not soft tissue sarcoma (STS) in general. To the best of our knowledge, this study involved the largest series of patients undergoing surgical and non-surgical management of pulmonary metastases from leiomyosarcoma. Soft tissue sarcomas are a heterogeneous group, with the lung as the most common metastatic site. Pulmonary metastasectomy is most likely to provide the best chance for patients with pulmonary metastases to obtain long-term survival. Nonrandomized studies evaluating pulmonary metastasectomy for patients with STS have reported 5-year overall survival rates not reaching 50%.<sup>2,3</sup> However, 5-year overall survival from pulmonary metastasectomy may be better than 50% if limited to patients with pulmonary metastases from leiomyosarcoma,<sup>3</sup> and the finding is consistent with this study.

Second, the authors successfully obtained a sample size of 20 patients undergoing non-surgical management, although it generally is challenging to compare surgical management and non-surgical management of pulmonary metastases from STS due to a limited sample size of non-surgical patients.<sup>4,5</sup> Inevitably, patient backgrounds differed significantly between the surgical and non-surgical patients. The differences were associated with significant variations in survival outcomes between the two groups. On this point, we wonder whether propensity-matching between the groups is worth attempting. Before discussing a potential benefit of pulmonary metastasectomy over non-surgical managements, it may be worthwhile to try propensity score-matching or inverse probability of treatment-weighting to minimize the selection bias.

Finally, the most important take-home message from the authors’ study is that 17 patients (39%) survived more than 5 years after the first pulmonary metastasis and that 7 of these patients still were alive at the last follow-up visit. In addition, 3 of the patients were free of disease and could be considered cured after repeated pulmonary metastases

The aforementioned information on survival outcomes suggests that pulmonary metastasectomy may cure stage 4 leiomyosarcoma patients, although an adequate control group was lacking. It would be ideal if we could identify such patients before pulmonary metastasectomy, which is a future project for thoracic surgeons who are or will be involved in pulmonary metastasectomy.

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First Received: 23 March 2022

Accepted: 11 April 2022;

Published Online: 26 April 2022

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**DISCLOSURE** There are no conflicts of interest.

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