Reply to Lampridis

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Received 31 January 2024; accepted 12 February 2024

Keywords: Lobectomy • Lung cancer • Morbidity • Mortality • Obesity • Video-assisted thoracic surgery

We read the comments by Dr Lampridis [1] with great interest, and we thank the authors for their interest in our work [2].

Undoubtedly, VATS surgery has become the preferred method in treating a broad spectrum of thoracic malignancies, with an increased level of technically challenging cases as surgeons acquire more confidence with this minimally invasive approach.

Referring to our recent publication [1], we consider that the well-known benefits of minimally invasive thoracic surgery and minimally invasive surgery in general could be amplified in fragile patient populations and could improve the patient's outcome. Our data showed that these patient populations should not be excluded from video-assisted thoracoscopic surgery (VATS) only because of patient-related technical difficulties, such as the ones due to elevated Body Mass Index (BMI).

As Dr Lampridis rightfully points out, the thoracotomy approach still remains an established necessity in many cases due to disease-related difficulties, such as locally advanced disease, pleural symphysis or previously administered treatments such as immunotherapy or targeted therapy. However, the planned access to perform lobectomy in these cases is dictated by disease-related characteristics and not the patient's elevated BMI, which represented the focus of our study. In the future, new technology, such as robotic surgery advancement, will better address this complex scenario.

Indeed, in terms of conversion rate, we did observe a 9.6% conversion to thoracotomy that appears to be in range with current literature [2–4]. However, a more challenging setting is a matter of fact in this group of patients (i.e. obese and morbid obese patients).

Moreover, we agree with Dr Lampridis when stated that the upcoming increase in using advanced oncological therapies as immunotherapy and targeted therapy will probably increase the need for thoracotomy to perform anatomical lung resections. On the other hand, we will become more skilled in addressing complex anatomical and clinical scenarios. At the same time, in centres of high volume and expertise, it is worth trying to approach these patients with minimally invasive surgery.

For sure, the analysis we present of the differences in postoperative complications between VATS and open surgery might help in the clinical postoperative management of patients undergoing more invasive surgical accesses and maybe could shift the standard postoperative management of such patients more towards the ERAS [5, 6] protocol as happens for VATS patients.

Looking at our study, we believe that such benefit in reducing postoperative complications is strongly dependent on early mobilization and pain management in addressing postoperative pneumonia, atelectasis, thromboembolic events, wound infection, bedsores and oversedation in a multidisciplinary setting involving anaesthesiologist, physiotherapists and neurologists. These implementations probably contribute to determining a reduced cardiovascular complication rate in obese patients.

Finally, in the future, we will consider an extended analysis of the specific complications at the base of such differences in targeted populations, allowing more precise prevention strategies.

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https://doi.org/10.1093/ejcts/ezae054
Advance Access publication 13 February 2024