



Reply to the comments of Dr Fayssoil

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Received: 16 November 2019 / Accepted: 17 November 2019 / Published online: 20 November 2019
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We thank Dr Fayssoil for his interest in our recently published study on diaphragm evaluation using echo. While we acknowledge the clinical relevance of the three questions raised, this study was not designed, nor was it powered, to answer them. Numerous factors can hamper diaphragmatic function after sternotomy [1] and determining the role of each one individually would certainly require a much larger sample size.

Only five patients in our cohort had chronic obstructive pulmonary disease (COPD), and since spirometry is not part of our routine evaluation prior to cardiac surgery, this data was not obtained. Although obesity and lung hyperinflation may limit diaphragmatic excursion and thickening, we speculate that in clinically stable (absence of pain, quiet spontaneous breathing), non-morbidly obese (95% of the patients had a BMI ≤ 35.4 kg/m²) and non-severe COPD patients, the influence of these factors would be negligible.

The presence of chest tubes can probably impair diaphragmatic function, but drainage of the mediastinum and pleura is usually maintained for at least 48 h after cardiac surgery, precluding comparisons with a “control” group without chest tubes. The recovery of diaphragmatic function at D3 (96 to 174 h after extubation), a time when some

of the chest tubes had already been removed, suggests that this hypothesis is probably true. However, we don't have robust data to confirm this.

Finally, 28% of our patients received catecholamines postoperatively, but the reason could be hypotension due to vasoplegia following cardiopulmonary bypass and not necessarily myocardial dysfunction [2]. None of our patients had severe heart failure as we only enrolled patients that were in stable condition without respiratory distress while breathing spontaneously.

References

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Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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