eComment. Pectus excavatum surgical repair improves cardiopulmonary function in adults

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Jayaramakrishnan et al. recently addressed the question: Does repair of pectus excavatum (PEx) improve cardiopulmonary function? [1]. Using an adequate keyword-based search strategy, the authors concluded that surgical repair using minimally invasive Nuss technique and Ravitch procedure caused an early, moderate decrease in pulmonary function tests (which are typically minimally impaired in PEx patients). In addition, cardiac function at rest improved during the early post-operative period, which is typically sustained in the mid-term.

Here, we take the opportunity to mention that Jayaramakrishnan et al. have failed to identify our previous study based on a large series of 70 patients, which was recently published in the European Journal of Cardio-Thoracic Surgery [2]. We think this omission is critical regarding the clinical bottom-line proposed by Jayaramakrishnan et al. because our study clearly demonstrated that the modified Ravitch-type repair [3] in young adults significantly improved maximal oxygen uptake (VO₂max) and O₂ pulse [2]. Increase of O₂ pulse (a surrogate of heart stroke volume) after surgery suggested that aerobic capacity (VO₂max) improvement was the result of a better cardiovascular adaptation at maximal workload. In a short series of PE patients, we recently reported that normalization of thoracic geometry by PEx repair could restore adequate negative pulmonary pressure during ventilation (i.e., respiratory pump) that is necessary to enhanced venous return, heart filling and cardiac output [4, 5].

Overall, we would like to offer the possibility to include our results [2, 4] in the present evidence-based medicine proposal to support the conclusion by Jayaramakrishnan et al. [1] that PEx repair improves cardiopulmonary function and supports aerobic capacity.

Conflict of interest: none declared.

References