Reviewer’s report

Title: Long-term results of radical pericardiectomy for constrictive pericarditis in Korean population

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Reviewer: Christophe Baufreton

Reviewer's report:

The authors evaluated the impact of conventional pericardectomy (CP) versus radical pericardectomy (RP) at long term in a retrospective cohort of patients undergoing surgery between 1995 and 2015. They concluded that RP provided better outcome at long term.

This is a very interesting topic, rarely assessed but their results and conclusion need to be considered with caution for several reasons that will be detailed as following.

* The rate of patients with radiation-induced pericarditis was very low (5.6%), and could explain why the mortality was low. This feature does not fit with the current practices of most cardiac surgery centers. It is therefore difficult to generalize the conclusion presented hereby.

* The most important result of this study is depicted by the figure 2. According to the KM survival curves, it is easy to consider that differences between the two surgical approaches were mainly observed during immediate postoperative course. For this reason, I would suggest a two-step statistical approach using a logistic regression at first (during early postoperative period) and a Cox model for the long-term outcome. But the difference between the two groups was unlikely due to a better recovery at long term since the two curves seem to follow a similar evolution, once the postoperative period was accomplished.

* The surgical technique must be detailed more extensively, as well as cardiopulmonary bypass (CPB) management. Whether CP removed pericardium in the vicinity of the inferior vena cava was obtained is not clear although it's an important step of the surgical procedure to restore adequate right atrium and ventricular filling, whatever the degree of pericardectomy. CP was indicated by poor operative feasibility according to the authors. Therefore it may be argued that patients undergoing CP were sicker than those having RP, or had they a more extensive disease. It may be supposed because higher NT-proBNP levels, pericardial thickening, CVP differences and more frequent preoperative anemia were seen in patients of the CP group.
* The vast majority of patients were operated on CPB, which is unusual for such an operation that is generally considered needing to be conducted as much as possible without the use of CPB, to limitate the risk of bleeding during and after surgery, especially in the patients having liver dysfunction or cirrhosis. How was this latter diagnosis made? What was the severity of the cirrhosis when present? The MELD score of this nearly one third of the patient population must be associated in the data reported in the table 2. Postoperative blood loss and transfusion rate must be reported since they are important data to explain the quality of the postoperative course. Generally, the patients having liver cirrhosis are considered to be at high risk after surgery using CPB, which seems to be different in this study. Why?

* On the other hand, more concomitant operations in RP group were performed. Could the better results in RP group just be explained by a better and more comprehensive surgical approach?

* Some sentences are confusing. The authors must clarify the text since it is more or less mentioned that RP increased mortality (page 8/27)

* Considering tricuspid regurgitation (TR), the tricuspid annulus diameter is the most convenient parameter, more than the preoperative degree of TR, to predict the postoperative occurrence of TR. This data should be reported in table 5. I consider that in the current manuscript the impact of the surgical approach on TR at long term is highly speculative.

* The table 4 should mention the statistical methods briefly to ensure quick better understanding. It needs also to be more precise in order to clarify the message, which is sometimes flawed (survival or mortality for hazard ratio of LCOS)

In conclusion, this article need major revision before being considered suitable for publication

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