Reviewer’s report

Title: A new shape for an old function: lasting effect of a physiologic surgical restoration of the left ventricle

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Reviewer: Tomasz Himle

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General
The paper concerns a medical problem of a great importance: how to treat an emerging population of patients with heart failure.

From a surgical point of view, the authors show a very well-established method of operation. The concept of this operation was described by Jatene (Brazil) in his fundamental paper “Left ventricular aneurysm. Resection or reconstruction?” published in JTCS in 1985. His material concerns 508 patients operated on in the years 1977-1983. In Europe a pioneer work on this topic was performed by Dor and concerns 130 patients operated on in the years 1984-1987. This paper was published in 1989 in “Thoracic and Cardiovascular Surg”.

Since then numerous studies have been published, showing excellent short- and long-term results of reconstructive surgery of the left ventricle, on a large number of patients. The reviewed paper does not carry any new concepts or important changes in surgical technique.

The authors emphasize the use of a very narrow patch for reconstructing the left ventricle. The size of the patch used for the closure of the left ventricle is rather related to the morphology of the left ventricle and aneurysm than to the wish of the surgeon, who should follow intraoperative findings. Every paper on this subject and every surgeon that I have encountered prefer an oval, not round patch during this procedure.

The aim of the study, which sounds like conclusion: “surgical restoration with particular shape of patch leads to steady morphofunctional improvement” made on 12 cases with 2 years of follow-up does not bring in anything new and should not lead to important conclusions. It is not a surprise that in a group of 12 highly-selected patients, the immediate surgical result is very good. The authors also evaluate the 2-year-results as good, while echocardiographic estimation in 2 out of 12 patients is a bad one, because of irreversible remodeling. Such conclusions certainly need deeper studies – these 2 patients represent 17% of the material, so the suggested prevalence of the very narrow patch is not obvious. Moreover, the size of the patch is closely related to the infarct size, and cannot be “undersized” to create a “small infarction”, like the authors suggest.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

The only value of this report is that simple and commonly used echocardiographic parameters could be useful in estimating the results of a complex surgical procedure. This is in accordance with observations of our group (Pol J Cardiol 2004, 60, 39. Acta Cardiologica 2002, 57, 73. Pol Arch Int Med 1999, 6, 487.). This observation has its practical value, while in clinical practice only simple methods could be useful in long-term estimation and clinical control of a growing population of operated patients.

Following this subject, the title of the article should be: “Simple echocardiographic measurements in assessment of left ventricular reconstruction”.

The echocardiographic measurement should be explained in more detail. It is not clear which method of EF measurements is used: Teichholz or Simpson (singleplain or biplane?). Both of them are advocated by cited American Society of Echocardiography. Probably the authors used biplane method; otherwise the 16% rise of EF after the operation would not be possible. If the paper is rewritten, taking into account the point of view represented in this review, it should be then reviewed again. The paper, presented without the suggested, radical changes, should not be considered for submitting to the Journal of Cardiothoracic Surgery.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Fig. 4 is not clear and not sufficiently explained, but it is not a surprise that a patch is not susceptible for remodeling whereas a ventricular wall could be.

Discretionary Revisions (which the author can choose to ignore)
What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.