Reviewer's report

Title: Bovine pericardium retail preserved in glutaraldehyde as vascular patch

Version: 1 Date: 22 May 2011

Reviewer: Thedosios Bisdas

Reviewer's report:

A. Major comments

1. Bovine pericardium is mostly implantated for the vascular reconstruction in the femoral or carotid artery as patchplasty. Especially in the carotid artery, do you propose the use of rough face?

2. You choose a bovine pericardium produced by Braile Biomedica. However, there are several industries that produce the same patch. The more interesting approach is from the industry Synovis producing the Vascu-Guard. In order to reduce the prevalence of calcification, they follow the so-called 'Apex-Processing'. Briefly, in this process, the levels of residual glutaraldehyde are below the limits of detection by the sophisticated analytical methods now available (<0.5 ppm) and products undergoing Apex-Processing have levels of cellularity that are four times lower than a variety of competitive materials including products 'conventionally treated'. Please consider to add these data in your discussion (http://www.obex.co.nz/Shared/Documents/Technical%20Review%20Apex%20Processing.pdf).

3. Besides, the calcification content in bovine pericardium with Apex-processing amounted to 0.4 microgram/mm in comparison to 24 microgram/mm for conventional bovine pericardium. Is not possible to have such a measure of calcification instead of crosses and three categories. Than your data will be more comporable.

4. Did you perform any microbiological investigation of the patch? Please describe the results of the anatomopathological investigation in the one pig with wound infection.

5. Which references did you use for the definition of calcification, integration tissue, internal apposition fibrosis etc?

6. Please provide more data about the cellular structure of the patches in each group after explantation.

6. Please make a more clear conclusion. Should the surgeons use the rough or the smooth face? If you are not able to provide such a conclusion, I propose to design a table with the results of all studies investigating the same topic. By this way, the reader will have a better overview to make the decision for the clinical practice.

B. Minor comments:

1. You have implanted 3 remnants in each pig (2 in the abdominal aorta and 1
was juxtaposed to peritoneum). Please change this in the abstract (Fourteen young pigs...replace abdominal aorta) and in the patients and methods (In each animal we implanted...facing the lumen).

2. Please replace the crosses with degress (+++ -> 3rd degree)

C. Discretionary revisions

1. The bovine pericardium is not used only in cardiovascular surgery but also in general- (hernia) or thoracic surgery (chest defects). Which is your recommendation in those cases according to your results? The answer could be added in your discussion to improve the clinical relevance of your manuscript.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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