Author's response to reviews

**Title:** Cardiac tamponade and para-aortic hematoma post elective surgical myocardial revascularization on a beating heart - a possible complication of the Lima-stitch.

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**Author's response to reviews:** see over
Dear Reviewers,

We appreciate Your valuable comments about our manuscript. We precisely analyzed them and tried to make revision strictly consistent with them.

In the title we emphasize that a sequential venous anastomosis was also performed in our patient.

Appropriate works of Ricardo Lima, Mandke, Salerno and Fukui were listed in the References.

Data about blood pressure, heart rate and ECG on readmission were completed.

We agree that echocardiography should have been the first step of diagnostic process in the patient early after surgical myocardial revascularization. At that time we had no influence on the undertaken procedures. Only after coronary stenting and angio-CT suggesting an acute dissection of the ascending aorta, the patient being in severe clinical condition was emergently transferred to Cardiovascular Surgery Clinic.

The diagnostic value of troponins assessment relatively early after myocardial revascularization was discussed.

Echocardiographic monitoring after tamponade decompression was performed, but it was not relevant, so we did not include this in the manuscript. Multislice CT (on 12th day after rethoracotomy) was performed mainly to reinforce our findings that were in opposition to the previously suspected dissection of ascending aorta on CT.

Unnecessary sentence on page 5 was removed.

Dressler’s syndrome was considered but intraoperative observation made during rethoracotomy by the operator was that it was not a bloody effusion but hematoma and fresh blood that filled the pericardial sac. It seemed apparent that bleeding was a cause of the cardiac tamponade.
The most interesting issue in this case are the confusing results of imaging examinations. The firstly performed 16-slice CT, considered as diagnostic tool of relatively low sensitivity and specificity, revealed limited dissection of the ascending aorta at the area of the proximal bypass graft anastomosis, which was not confirmed on subsequent TEE. Thinking of the possible explanation of this diagnostic discrepancy we considered iatrogenic aortic dissection at the time of coronary artery bypass grafting or angiography, self-healed within following hours. Garg P et al[1] described resolution of aortic dissection in several hours.

In the differential diagnosis of severe clinical condition in patient after surgical myocardial revascularization on a BH we consider: acute coronary syndrome as a result of the early graft occlusion, acute aortic dissection post surgical myocardial revascularization or coronary angiography, cardiac tamponade due to the bleeding from surgical sites.

TTE performed in the ICU after readmission was not appropriable, because the patient was intubated, in a severe condition with inadequate acoustic window.

Considering the postoperative course, the results of the diagnostic imaging tools and especially the operative view we still believe that Lima-stitch, could have been a cause of the pericardial nutritional vessel injury and bleeding with subsequent hematoma formation. It was visualized in the TEE as para-aortic hematoma. The presence of hematoma indicated also that it was a long-lasting bleeding and it could not have been massive, because it would have resulted in earlier patient’s decompensation.

According to our knowledge it is the first such a case in literature. Planning of the surgical intervention was challenging especially in the aspect of non-consentaneous results of imaging examinations. More aggressive management, including rethoracotomy, should be considered in case of patient with cardiac tamponade relatively early in the postoperative period, severe clinical presentation and unclear results of diagnostic examinations.

All revisions were highlighted in the text.

We hope that our revision is satisfactory.
Your sincerely

Anna Marcinkiewicz MD on behalf of myself and the co-authors.

All authors participated in the revision and approved the final, revised manuscript.

References