Reviewer's report

Title: Complication in vacuum assisted closure- A rare case of ventricle rupture and overview of 54 cases in cardio-thoracic surgery

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Reviewer: Claudius Diez

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The study by Ina Ennker et al. represents a retrospective, single-centre analysis of 54 patients with deep sternal wound infection after sternotomy for cardiac surgery. The authors describe their treatment strategy and outline one fatal complication of VAC-therapy in an interesting case report.

Since postoperative mediastinitis still represents a major and increasing cause morbidity and mortality, the study under review addresses an important issue for cardiac surgeons. Although the authors do not introduce new treatment concepts, the findings in this study are in line with several recently reports and thus may have an impact for the treatment of mediastinitis in other centres as well. The concept of VAC-therapy followed by muscle flap chest wall reconstruction has been shown to be superior compared to conventional surgical approaches such as irrigation with iodine-saline-solutions and rewiring the sternum.

Major compulsory revisions

1. The title is somewhat misleading because rather than complications of VAC-therapy have been shown, the authors purely describe demographic and perioperative data in the major part of the result section. Only Table 4 addresses the question the authors pose in the manuscript title. Another issue arose from the paragraph “A rare case of ventricle rupture and overview of 54 cases in cardio-thoracic surgery.” In fact, the authors describe one case with ventricle rupture among 54 patients. They do not review 54 patients with ventricle rupture as the title might imply. The title should be corrected and adequately reflect the study.

2. Although the authors provide data on complications until DSI was detected, I miss an analysis (e.g. logistic regression model) to what extent each of the risk factors might have contributed to the development of DSI in the study centre. In other words, what are the Odds ratios and confidence intervals for DSI with respect to the risk factors shown in Table 4? Otherwise, the data remain purely descriptive and cannot be compared with the results from other reports.

Minor essential revisions

1. The manuscript contains several grammatical and spelling errors (e.g. page 6, line 2 “… cardiac surgery, who (not which) suffered…). According to international standards, the result section should be usually presented in the past tense, not in
mixture between past and present tense.

2. Table 2 looks inconclusive to me. Does CABG and valvular repair mean CABG only and valvular repair only or do the numbers represent combinations of both? What is then “combinational surgery”? In fact, 54 patients were mentioned in the Material & Method section, but according to Table 2 there were 67 patients with CABG, valvular repair and aortic reconstructions plus 12 patients with a combination of, I suppose, CABG and valvular repair. The authors are requested to clarify the numbers in Table 2.

Discretionary revisions: none

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

**Quality of written English:** Needs some language corrections before being published

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