Reviewer's report

Title: New evidence on the process of colonic anastomosis healing in Wistar rats

Version: 3 Date: 20 April 2010

Reviewer: Petra Lynen Jansen

Reviewer's report:

The above named manuscript investigates bursting pressure, inflammation and myofibroblast infiltration in colonic anastomoses in rats. The design of the experiments is appropriate and well described; the number of animals sufficient. The manuscript adheres to the relevant standards for reporting and data deposition. The findings are well described and the conclusions fit to the results. Data are sound. Writing is acceptable.

However, some remarks have to be made.

1. Minor Essential Revisions

The question posed by the authors does not fit well to the study. The authors' give a nice histological and mechanical description of wound healing and myofibroblast activation of colonic anastomoses that is in principle nothing else than scar formation. These findings may support the clinical observation that the risk for anatomic failure decreases over time. A new approach e.g. to investigate the biological events for early wound failure is missing and this is the major limitation of the study. The authors do not give any insight into the molecular events that guide the wound healing process and that may be responsible for proper scar formation or not. The limitations of the study should be stated out more clearly.

The authors’ findings are not really new. An increment of bursting pressure with time after colonic anastomosis was shown by several authors. It is essential that the authors update their references that are at least 5 years old. Moreover it is well known that myofibroblasts are essential for proper wound healing. The authors should avoid statements like ‘New evidence’ as mentioned in the title and in the conclusions.

2. Discretionary Revisions

Page 2, line 7: the first group animal should be corrected.

Description of Figure 3 does not fit to the presented histological pictures and resolution is not good.

The Van der Hamm adhesion score should be described in brief.

The authors should give some comments on their clinical findings. Did they observe any anastomotic leakage or other complications that might correlate to the histological and immunhistological findings?
Level of interest: An article of limited interest

Quality of written English: Acceptable

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