Reviewer's report

Title: Tension of knotted surgical sutures shows tissue specific rapid loss

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Reviewer: Moritz Wente

Reviewer's report:

The paper by Klink et al. describes the results of the rapid tension loss of surgical knots in different tissue types evaluated in overall three rabbits.

Major Compulsory Revisions:

1. The authors should explain the reason why the animal experiments have been performed in Moscow and not in Aachen. Furthermore, a description of the contributions of the overall nine authors should be given.

2. The given title "Tension of knotted surgical sutures shows tissue specific rapid loss" is very general and should be narrowed to the limited animal model in order to accurately deliver the content.

3. More details should be given regarding the setup: (a) why the used suture material, (b) who performed the procedures, (c) is there no alternative to hand-knotting in order to avoid the variation of the knotting strength, (d) how was the size and amount of tissue standardized in the bites of the sutures, (e) why rabbits and only three animals.

4. Which exact knotting technique has been used? There are publications revealing a huge variability between surgeons - e.g. Fischer et al. Langenbecks Arch Surg 2010. This fact should also be incorporated into the discussion section.

5. The variability of knotting tension is a clear limitation of the study and should be discussed in more detail.

6. Has the "customised force sensor" been validated? Is there literature about it available?

7. The authors speculate in the final paragraph of the discussion about differences between single sutures and running sutures; they should provide and outlook how to evaluate also running sutures in the future and to compare the results with single sutures, as their "device allowed only the evaluation of single sutures".

8. Considering figure 3 as a representative picture, the authors should further describe the figure, as here it is most likely shown that three measurements are taken on the skin, two on the stomach, and three on small bowel. According to the materials and methods, always 6 measurements have been performed on the different tissue/organ types. In a specific consecutive order? Was there a difference between assumed "early measurements" and "late measurements"?
Minor Essential Revisions

1. In the Introduction section many statements are lacking support by references.
2. Would a elastic monofilament suture potentially not loose tension or in a different amount?
3. The authors should clarify, why in addition to the mean +/- SD also the range is given - if, then the median should also be included.
4. Reference 12 is an abstract - is there also a full paper available to cover this statement?
5. The described inverse correlation between collagen content and tension loss should be covered by some references (discussion page 12, last paragraph).
6. The references should be corrected, as they include listing numbers in the lines of the journals.
7. Why are only institutions "1" and "3" given on the title page?

In summary, the given study has clear limitations (standardisation of technique, small number of animals, etc.); in the current form, it would not be very interesting for the readership of an general surgical journal.

**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.

**Declaration of competing interests:**

I am currently employed by a competitor of the company which distributes the suture material used in the given study. However, as there (a) are no specific comparisons with other suture materials given and (b) the monofilament polypropylene suture material is a standard material, there should be no considerable competing interests in reviewing the paper. Furthermore, (c) the used suture material is used only as a vehicle to evaluate knotting tension in general without taking care of potential features of the material, and (d) no financial support by the competitor is stated by the authors.