Reviewer’s report

Title: The incidence of neovascularity in patients clinically diagnosed with rotator cuff tendinopathy

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Reviewer: Poul Frost

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This study addresses issues concerning possible pathoaetiolgy and origin of subacromial shoulder pain with focus on neovascularity in rotator cuff tendons as defined by ultrasonography.

The aim stated was to investigate the incidence of neovascularity in the rotator cuff tendons in subjects with unilateral shoulder pain clinically assessed to be rotator cuff tendinopathy. However, the authors also relate self reported pain and function to neovascularity. I suggest that these topics are added to the aims stated.

Major compulsory revisions

1. This is a cross sectional study of neovascularity defined by ultrasound comparing the prevalence of these findings in symptomatic shoulders with the prevalence in asymptomatic shoulders within 20 participants with unilateral disorder. I suggest that the use of ‘prevalence’ and not incidence in the title and throughout the manuscript, since ‘incidence’ implies a longitudinal design.

2. Introduction: it is not clear what the authors mean by ‘neovascularity’ and ‘tendinopathy’. It is central to help readers to understand the exact meaning of these terms. It is necessary to explain whether ultrasound directly demonstrate new vessels or just blood flow in tissue areas. If this is the case the term neovascularity seems less appropriate. A little information about the nature of neovascularity would also be helpful.

In general I will recommend to the authors the STROBE Statement Checklist for revising of the method and result sections.

3. Methods: There is a lack of information on central aspects including: specification of study design, methods and periods of recruitment, choice of sample size, description and interpretation of clinical tests, specification of methods for assessment of shoulder function and pain, definition of neovascularity, analyses and statistical methods. More information is also needed to explain how the third radiologist performed documentation of the scans and how this would secure blinding with respect to symptoms? In the result section duration of symptoms and grey scale ultrasound findings are reported. The method section should inform on the methods used and also how grey scale findings were defined.
4. Results: It is of interest to get information on the steps of inclusion and exclusion of subjects preferable as a flow chart. How many subjects were considered for inclusion, from where were they referred, how many was excluded due to: bilateral symptoms, age, failing clinical criteria etc.

5. I believe the authors’ main aim is to compare the prevalence of neovascularity in symptomatic shoulders with the prevalence in asymptomatic shoulders within subjects with unilateral shoulder disorder. I therefore, suggest that table 1 is replaced by a table that shows summary statistics of duration of symptoms, prevalence of pain at rest, summary statistics of OSS-score, prevalence of positive clinical sign and grey scale findings, and also summary statistics of passive and active ROM for shoulders with and without the defined disorder. This information will provide the reader with impression on how affected the symptomatic shoulders were.

6. As mentioned above, table 2 includes grey sound findings. Methods and criteria for assessment of grey sound findings should be lined out in details in the method section.

7. On page 7 results concerning associations between neovascularity and pain and OSS are presented. As mentioned above, It should be stated whether these comparisons were part of the aim of the study. The method section should provide information on how data were analysed.

8. Discussion
Given the limitations mentioned by the authors it seems to be questionable whether the observed ultrasound alterations in fact represent neovascularity in the rotator cuff or bursa. This should be reflected in the conclusion.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

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