Reviewer’s report

Title: Arthroscopic Partial Meniscectomy in Middle-Aged Patients with Mild or No Knee Osteoarthritis: A Double-Blind, Randomized Sham-Controlled Multi-Centre Trial

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Reviewer: Lars Weidenhielm

Reviewer’s report:

The purpose of the present study is to determine whether the benefit from arthroscopic partial meniscectomy in patients age 35-55 years with knee pain and an MRI-verified medial meniscus lesion is greater after arthroscopic partial meniscectomy than following sham surgery. Clinical evaluation will be done after 2 years and the incidence and progression of osteoarthritis will be evaluated after 5 years. Eligible patients are those with knee pain for more than two months without significant trauma and an MRI-confirmed medial meniscus lesion with no or minimal osteoarthritis they will be randomized to either partial medial arthroscopic intervention with partial medial meniscectomy or sham surgery procedure where the knee will be manipulated and two skin incisions will be made but no instrument will be entered into the joint. The primary outcome at 2 years will be KOOS5 with secondary generic patient reported outcomes and performance measures. The sample size will be 40 patients in each group according to the power calculation based on a difference of 10 KOOS5 score unit and block randomization will be used. The RCT will be a double-blind trial following the intension to treat principals. Eligible patients who do not participate in the study will also be followed. My only problem with this study as the authors discuss themselves on page 10 in the 3 paragraph is that the results of the study will heavily rely on a correct interpretation of the MRI-examinations and the ability to diagnose a degenerative tear in the meniscus. If, for instance, no meniscus lesion exists despite the interpretation of the preop MRI-examinations stating a degenerative meniscus lesion and the patient will be randomized to a sham operation, this error will never be discovered and if the patients symptoms resolve the false conclusion in this case will be that there was a degenerative tear in the meniscus that didn’t need treatment. I have not been able to find any published study about the number of false positive and false negative interpretations of meniscus lesions in MRI-examinations of the knee but I know that in our study (Herrlin at al. 2012) there were a couple of cases with positive MRI-findings and no meniscal tear on arthroscopic examination. An alternative approach to the sham operation without entering the knee might be to do an arthroscopic examination on all the cases to be sure that there actually is a tear in the meniscus and then only resect the torn meniscus in the examination group. However, the authors might feel that an arthroscopic examination will be too big to qualify as sham surgery.
1. Will the study design adequately test the hypothesis? Please see my thoughts above as the hypothesis are written I think that the study will adequately test the hypothesis.

2. Are sufficient details provided to allow replication of the work or comparison with related analyses? Yes.

3. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes.

4. Is the writing acceptable? Yes.

**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.

**Declaration of competing interests:**

I declare that I have no competing interests