Reviewer's report

Title: Increased CCL19 and CCL21 levels promote fibroblast ossification in ankylosing spondylitis hip ligament tissue

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Referee's comments to the author(s)

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This paper examines the possible role of the chemokines CCL19 and CCL21 in the pathogenesis of AS, and in particular whether they might influence fibroblasts to mediate heterotopic ossification. There seems to be no prior evidence to implicate these cytokines in this process. Importantly IHC shows staining for the chemokines and their receptor in relation to blood vessels (probably endothelial cells) but the investigations are mainly on fibroblasts, so their significance is unclear. Specific comments:

1. The introduction is much too long and contains material which is not relevant to the disease under study.
2. The patients with OA are extraordinarily young to come to THR. What was the pathology? Why is disease duration not given for them?
3. The authors never define what is meant by "ligamentous tissue". Was this obtained from the same site in each case? Is it from an enthesis or intra-articular (e.g. ligamentum teres)?
4. The differences shown throughout (but e.g. Fig. 1) seem small with wide SD intervals. Whilst significant results were apparently seen, the data might be more easily appreciated by box and whisker plots since it seems likely that the wide SDs represent considerable variability in different patient samples. Non-parametric analysis might also be preferable. Differences in Fig 1 may also reflect the increased vascularity of AS tissue - this could be controlled for by staining with a marker for endothelial cells.
5. The authors describe CCR7 expression on fibroblasts as "weak" but in fact Fig 2B shows negative expression by the vast majority of cells and a small sub-populations which are clearly positive (?contaminant - possibly the small population which is also CD90 negative). Fig 2A does not contribute anything useful. How many cycles were required to obtain the products seen in 2C? What are the units for CCL19 secretion in 2D (if picog/ml these are trivial)? The growth responses to chemokines are minimal are don't need to be shown in full.
6. The units for BADAI and BASFI are incorrect.