Reviewer's report

Title: The in vivo location of a primary wear scar in metal-on-metal hip replacements: a novel technique

Version: 3 Date: 15 December 2014

Reviewer: Julia Shelton

Reviewer's report:

The paper addresses an important issue, namely that related to identifying the location of wear on metal on metal components. The paper is clearly written.

The methods that have been used are clear and indicate that the techniques proposed can be used if there is sufficient information provided, namely a CT scan and components that have sufficient rotational distinguishing features.

The figures appear to be genuine although I am not sure of the value of having both Figures 2 and 5. They both show the same data but Figure 5 is much more interesting as it relates the centre of the wear path to the anatomical position.

The discussion and conclusions are well balanced and adequately supported by the data as this is a relatively straightforward study with few limitations of the work.

The authors clearly reference appropriate sources.

I believe that the title claiming this to be a novel technique might be changed to ‘Method for the location of primary wear scars from retrieved metal on metal hip replacements’.

The abstract might be better to redescribe the novel technique as a method. The conclusions in the abstract are a little strong from the paper as presented.

Major Compulsory Revisions

This is a methodology paper and not one the sets out to address the fundamental mechanisms. The description that the method described is a novel technique may be a little extreme – the methods used are applying established techniques to produce a method for this important application.

Table 1 describes many features about the retrievals that are not necessary for this paper – they are never referred to, nor are they used to explain the difference in wear patch location. If this table were to be reduced then it would make this paper a technical note rather than a paper which is probably appropriate. I believe that this paper should be changed to make it a technical note.

Level of interest: An article whose findings are important to those with closely related research interests
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