Reviewer's report

Title: Bone mineral density of the proximal femur after hip resurfacing arthroplasty: 1-year follow-up study.

Version: 3 Date: 31 January 2011

Reviewer: Jonathan Lee

Reviewer's report:

1. Is the question posed by the authors well defined?
Thank you for the opportunity to review this interesting study. The question is well-defined. The authors wished to study the changes in the femoral neck BMD after hip resurfacing arthroplasty and they used DEXA in their analysis.

2. Are the methods appropriate and well described?
The methods are appropriate but the descriptions are somewhat confusing and need to be more clearly and succinctly stated in grammatically correct English. As mentioned in the specific comments, please describe if your DEXA technique is novel or one that you have used before.

3. Are the data sound?
The DEXA data seem reasonable. I would appreciate a tabular or graphic presentation of the data; I believe this will help you express your conclusions. I also would suggest tables or figures for your other data (e.g. VAS scores).

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
The authors appear to have adhered to the relevant standards for reporting data.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
The discussion and conclusions seem reasonably well-balanced and adequately supported by the data.

6. Are limitations of the work clearly stated? Yes

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? n/a

8. Do the title and abstract accurately convey what has been found? Yes

9. Is the writing acceptable? The idea is excellent but some of the grammar/English needs to be re-worked.

SPECIFIC COMMENTS:
1. Abstract, first sentence. The wording is awkward. I suggest, “In addition to
implant-related stress-shielding factors, various other patient-related factors may have an effect on bone mineral density of the proximal femur in patients with hip resurfacing arthroplasty.”

2. Abstract, “Methods” first sentence: I suggest changing the wording to, “Thirty three patient (9 females and 24 males) with mean (SD) age of 55 (9) years were included in the study.”

3. Background, 1st sentence. Much too strongly worded. HRA is “a” treatment for OA in the young population, not “the” treatment.

4. Background, 3rd paragraph, 1st sentence. Please consider changing the first part of the sentence to, “Although hip resurfacing methods have been used already…”

5. Background, last sentence. Please consider changing to: “In addition, we sought to study how bone remodeling was affected by stem-neck angle, as well as some patient related factors such as physical activity.”

6. Methods, 1st paragraph, 4th line. Please change “<” to “>” in “…and 21% were obese (BMI <30.0).

7. Methods, DEXA analysis section, second paragraph: “ROIs 9 and 10 were positioned to medial and lateral upper femur including greater trochanter, respectively.” This needs to be re-worded so it better describes what you are trying to explain.

8. Methods: Please make mention of whether or not your DEXA analysis technique is novel or not. Are these ROIs commonly used or is this a custom protocol for your study?

9. Methods, Operative technique, 1st sentence. Please revise to, “The patients were operated on by one experienced orthopedic surgeon using a posterior approach with the Birmingham Hip Resurfacing (BHR) system.”

10. Methods, Operative technique, last sentence. Please consider revising to, “All the patients were allowed to bear full weight on the first post-operative day although a cane was recommended for 2 weeks after the operation to help with balance.”

11. Results, 3rd paragraph, second-to-last line. Typo-O: “BMB” should be “BMD”

12. Discussion, 2nd paragraph. The English should be re-worked here so the sentence structure is less awkward. I believe your point is that immediate weight-bearing, in your opinion, helps preserve BMD; please make this clear and support the statement with appropriate references.

13. Discussion, 3rd paragraph. As in the second paragraph, please re-work the English to more clearly state your point.

Quality of written English: Not suitable for publication unless extensively edited

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'