Reviewer's report

Title: Changes of gluteus medius muscle in the adult patients with unilateral developmental dysplasia of the hip

Version: 2 Date: 4 March 2012

Reviewer: Marie Gdalevitch

Reviewer's report:

Major compulsory revisions

1. Please provide the data that demonstrates "degree of contracture in gluteus medius muscle is not in concordance with the degree of hip subluxation" in a table format and include this in the results section before bringing it up in the discussion.

2. It appears that your study is only confirming findings we already know about the abductors and their abnormalities in DDH. Although their are perhaps no CT studies to demonstrate this, there are anatomical dissections that have described these studies before. Can you elaborate on how your findings are new and contribute to helping us understand the abnormalities of the gluteus medius muscles (please elaborate in Introduction as well as Discussion). Perhaps this study will allow us to compare to post-operative MRI or CT of THA in DDH? We need to find a greater significance, other than confirming findings we already know.

3. Can you elaborate on how this finding will help develop better rehabilitation protocol or prevent dislocations. current rehabilitation protocols are already focused on abductor strength, particularly for patients with DDH.

Minor Essential Revisions

1. Please explain why you used a CT and not an MRI scan for assessing the gluteus medius muscle, when other papers were based on MRI

2. Please explain why you focused exclusively on gluteus medius and ignored maximus and minimus, in the introduction.

3. Please elaborate in discussion how this information can be used by total hip surgeons in a constructive manner for better reconstruction.

Discretionary Revisions

1. Consider whether further studies should be done on assessing postoperative MRI or CT for patients with THA to assess changes in gluteus medius muscles.

2. Consider assessing all abductors in the same manner to describe their abnormalities.
3. Consider repeating study with MRI analysis.

Overall, some work needs to be done in Introduction and Discussion to better explain the significance of a CT assessment of the gluteus medius. Also, english language corrections need to be made throughout the text.

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.