Reviewer's report

Title: Age and gender as determinants of the bone quality of the greater tuberosity: A HR-pQCT cadaver study

Version: 2 Date: 11 March 2012

Reviewer: Stefan Greiner

Reviewer's report:

The manuscript “Age and gender as determinants of the bone quality of the greater tuberosity: A HR-pQCT cadaver study” represents a well written study about bone parameters of the greater tuberosity which were compared according to sex and age in 3 different locations of 64 shoulders of 32 cadavers. The study is well written and the results give some additional insights to existing data. There are some minor concerns, which need to be revised, especially regarding the discussion.

Title: adequate

Key words: Osteoporosis has not been defined in the study for the investigated cadavers

Line 96: BV/TV when mentioned first should be not abbreviated

Line 110: there have been no specific measurements/clinical data for osteoporosis. Therefore there can not be any comments regarding this pathology.

Line 144: Was there any significant difference in age between the male and the female group?

Line 245: the impaired healing and re-rupture may only be associated with the anchor pull out, not with the bone quality itself, please clarify.

Line 255: which part?

Figure 5 “handedness analysis” is lacking, Figure 6 is labeled incorrectly Fig 5

Figure 4: Labeling with * and # is difficult to understand in this figure

General:

Are these measurements of clinical relevance, e.g. are the differences high enough to produce an increased/decreased pull out force of anchors with normal load?

In the current literature anchor pullout does not seem to be the major issue about rotator cuff repair with the new implants. Please provide citation or discuss accordingly.

What was the rationale to take these regions (PM and AL) of interest? Anchor position in clinical practice does not fully reflect this positioning.
There was just a significant difference in PM between male and female in the investigated parameters. Especially also the control region SC was not different in male and females. What is your explanation?, please discuss. One reason could be, that there were age differences in the male and the female group – please provide data.

Did you do a power analysis for the data? Is the investigated group big enough to show the estimated difference in between the evaluated parameters?

**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