Reviewer's report

Title: Biomechanical comparison of anterior lumbar interbody fusion: stand-alone interbody cage versus interbody cage with pedicle screw fixation

Version: 1 Date: 11 February 2013

Reviewer: Martin Quirno

Reviewer's report:

Thank you very much for the interesting study, it was a pleasure to read and edit it.

The main question is well defined by the authors, although they did not focus on one the most important issues, which is why is this particular FEM study better that the prior Gerber biomechanical study published? Also why was the study not performed with real spine instead of a FEM?

The methods are well described except for the statistical analysis, which was never performed. The authors jump to significant conclusions such as "The stand-alone interbody cage will provide sufficient stability, reduce the stress in adjacent levels, and share the loading distribution similar to an intact spine" without backing the conclusions with true statistical analysis.

I believe that without proper statistical analysis the discussion and conclusions that were made are not supported.

The authors never state the limitations of this particular study throughout the manuscript.

I believe that the title should convey that this was performed as a FEM, not an anatomical biomechanical study with cadaveric spines.

There are some basic grammatical errors throughout the manuscript that should be addressed, especially in the introduction.

The authors failed to include legends for all figures, especially for 6-9 which are key figures to help sustain the conclusion. These figures should also include asterisks for statistically significant values.

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, and I have assessed the statistics in my report.