Reviewer’s report

Title: Biological and biomechanical evaluation of interface reaction at conical screw-type implants

Version: 2 Date: 2 January 2006

Reviewer: Dominic O'Sullivan

Reviewer’s report:

General

The manuscript describes a carefully designed study looking at aspects of mechanical stability and bone response during early healing of a newly designed screw type implant system. The implants were evaluated using resonance frequency analysis, removal torque tests, histological, SEM and histomorphometric analysis.

There are an unusually high number of spelling and typographic errors in the manuscript for a journal submission. The references section is particularly poor with a very high number of errors and inconsistencies in style and format.

The paper would have been improved with the use of a clear control group, possibly of a commercially available implant system. Although valid comparisons can be drawn between this study and similar published results for other implant systems.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. The conclusion section of the abstract is not clear and should be reworded to improve its clarity.
2. Greater detail should be included in the materials and methods section on the implant surface (which is an important factor in this study). What is the orientation and shape of the microtextured grooves and is the implant really smooth at the nanoscale? What is really meant by 'smooth', this should be clarified.
3. In the materials and methods section the drilling sequence and the relationship of the drill diameter to the implant diameter could be made clearer, an illustration of the burrs would be useful here.
4. The first line of the RFA results is incorrectly worded and should probably read "The RFM of 28 days demonstrated no significant change..."
5. There are several sentences that appear to be poorly structured making their meaning unclear. For example the last sentence of the 2nd paragraph in the discussion, and on page 10 "The RFM and removal torque values were found to be comparable towards stability determination..." and also on page 10 what is meant by mechanical rest in the sentence "...mechanical rest, which is one of the essential factors for the development of osseointegration".
6. There are a number of errors of content and inconsistencies in format within the references section. For example in references 1, 3,4,6,8,12,13,14,15,19,24,26,27,28,33,34,37,39.

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Discretionary Revisions (which the author can choose to ignore)

**What next?:** Accept after minor essential revisions

**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:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.