Reviewer's report

Title: Digital Anatomical Measurements of Safe Screw Placement at Superior Border of the Arcuate Line for Acetabular Fractures

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Reviewer: Christoph Emanuel Gonser

Reviewer's report:

First of all, the paper itself is promising and has some potential, however, there are major issues which need to be addressed.

In General, the paper would need thorough corrections by a native speaker, sometimes it can be only guessed what the authors meant. Moreover there are many orthographic mistakes which should be corrected before submission!

1. Abstract:
The purpose is not completely clear or not easy to understand, splitting up the sentence into two might help.

Line 36: “adults eliminated pelvic diseases”. Do you mean patients without pelvic injury? Another way to put it would probably be “98 uninjured pelvises of Chinese adults were examined”

Line 38: “and. Five”: remove the period
Lines 38 - 42: It is not clear how the angles alpha and beta are defined
Lines 41 – 42: How are the safe screw depths or lengths defined?
Line 45: “The maximumscrew” replace with “The maximum screw”

2. Introduction
As mentioned above, thorough correction by a native speaker will be necessary throughout the paper.

Line 80: “hip joint for the articular surface could not be observed directly” might be replace with “penetrate the hip joint since the articular surfaces cannot be observed directly during the procedure.”

Lines 81 – 85: “This can result to”: change “to” to “in”; “in further” change to “in the long run”;
“which increase …”: split up the sentence, e.g. “these techniques however increase operation time and iatrogenic trauma”

Lines 87 – 97: This section is very hard to understand; more references would be needed especially considering previous anatomical research. Moreover, there are just too many orthographic mistakes.
Lines 97 – 106: There are some studies which have been conducted in live patients and there are some studies comprising a higher number of samples.

Lines 111 – 112: How exactly did the application of engineering design software help with warranting the objectivity?

3. Patients and methods
As mentioned above, due to the use of the English language, some parts of the paper are difficult to understand, thorough correction by a native speaker would help.

Please give the number of the ethics committee and explain exactly why the CT scans have been performed, especially in regard to the high radiation dose each patient was submitted to.

Line 137: I recommend replacing "Each patient's DICOM …" with “DICOM formatted CT scan images of each patient…”

Lines 143 – 148: A figure explaining the construction of the planes would be helpful.

It is not completely clear how the safe zones respectively angles and screw lengths are defined. However, this is one of the most critical points in the paper. The figures definitely help, however it would be beneficial for the paper if clear, easy to understand definitions would be given.

4. Results
Table 3 was missing, otherwise the results are presented clearly.

5. Discussion
Line 204: Please add space between “facilitate” and “screw”.
Line 206: Please add space between period and “Benedetti”.
Lines 210 – 214: What is meant by “For 0.5-cm entrance points”? I would recommend changing “violation” into “penetration”.

6. Limitations and shortcomings
Which medical conditions kept you from logging standard anthropometric data such as length and weight?

7. Conclusions
Lines 260 – 262: “The minimum safe angels…”: this sentence should be rephrased to make it easier for the reader to understand the difference in the angles suggested for female and male pelvises.

There is potential in the paper, the approach to define a safe zone for anterior
column screw placement is promising. It would be interesting how this can help in
daily clinical routine, this could also be further discussed.
I would like to see the paper again after the revision.

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

**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 interest.