

**Reviewer #1:**

1. The fracture is a common noun, which should be singular or plural. In the whole text, a fracture or fractures should be used. e.g., Introduction: line 1, 2; ---.

A: The use of the term "fractures" has been consistently maintained throughout the entire text, as per your request.

2. Do you study an intra-rater or an extra-rater agreement to support study reliability?

A: We conducted an inter-rater agreement analysis to support the reliability of the study, and the corresponding results have been included in the manuscript.

3. In M & M: Once FEA with full spelling is used, FEA should be used in the text thereafter.

A: We initially defined FEA in the establishment of the finite element model of M&M and subsequently utilized abbreviations throughout the remainder of the text.

4. In Discussion: line 1; Femoral neck fractures are associated with a high mortality rate and disability. Is it true, references? Based on the current literature, a high success rate of treatment with a low mortality rate can be predicted in both young adult and elderly patients.

A: Recent literature does indeed report high mortality rates associated with femoral neck fractures, and numerous factors contribute to this outcome. The revised version of the manuscript now includes appropriate references to support this statement.

5. In Discussion: line 6; Full spelling of FNS is unnecessary.

A: Thank you for your modification request. The text has been revised as requested.

6. In Discussion: line 28,29; References 21,22,23 are cited. The failure rate is too high. All are out-of-date and recent articles should be cited. For displaced femoral neck fractures (type 3,4 Garden classification), 20% osteonecrosis and 10%

nonunion are normally predicted. For non-displaced fractures, a less than 10% complication rate can be achieved.

A: We have cited a recent article and changed the failure rate.

**Reviewer #2:**

1. In the present form, actually nothing really novel. The current works appears to be a replication or modified literature according to the lack of novelty. The authors must extensively describe the novel in their work. This work should be rejected due to a serious concern.

A: Thank you for your recommendations. As requested, we have provided more detailed explanations in the paper.

2. Previous literature related needs to explain in the introduction section consisting of their work, their novelty, and their limitations to show the gaps that intend to be filled in the present work.

A: We have modified the text accordingly.

3. It is suggested to the authors to make the objective of the present work become more clear to understand.

A: We have modified the text as requested.

4. Recommended to the authors provide an additional figure in the introduction section with related submissions after revision to improve the article presentation.

A: We have incorporated your suggestion and included a diagram illustrating the application of FNS in the introduction section. This addition enhances the visual presentation of the article and provides a clearer understanding of the FNS technique.

5. To let the reader comprehend the workflow of the current study, the authors could include extra illustrations as a type of figure in the materials and methods rather than simply the main text as a present form.

A: We have implemented your suggestion and included a flowchart in the text to present the process of building the finite element model. This visual aid helps to illustrate the steps involved and enhances the clarity of the description.

6. The authors mandatory explains the urgency of performing computational simulation in the introduction section. This approach brings several advantages such as lower cost and faster results compared to experimental and clinical study.

Please incorporated this issue along with relevant reference as follows, doi: 10.1038/s41598-023-30725-6,10.1016/j.heliyon.2022.e12050,10.3390/met12081241

A: We have provided additional information regarding the advantages of computational simulation as requested; furthermore, we have added new references.

7. The materials is present situated model should giving the assumption description as “homogeneous, isotropic, and linear elastic”. Please provide this explanation along with relevant reference as follows, doi: 10.3390/ma14247554, 10.3390/jfb13020064, 10.3390/jfb12020038

A: We have met your requirements by providing a detailed description of the assumptions made in our study, specifically considering the material properties as "homogeneous, isotropic, and linear elastic." Additionally, we have included comprehensive references for the parameters used in the analysis, ensuring accuracy and facilitating further exploration of the topic by interested readers.

8. Is the present study performing mesh sensitivity/convergency study? This step is crucial do done for selecting appropriate number of element used without burden the computational simulation load, but still giving accurate results. Please include the explanation and results if the authors done it or state it as limitations if the authors does not perform in. Also, refer the relevant reference as follows, doi: 10.3390/biomedicines11030951, 10.3390/su142013413, and <https://jurnaltribologi.mytribos.org/v33/JT-33-31-38.pdf>

A: We have fulfilled your requirements by conducting a mesh convergence study as requested. Additionally, we have incorporated the relevant literature that supports our approach.

9. The present computational simulation is lack of proper validation with experimental/clinical results. It is make the present study doubtful results under actual conditions. Please state this crucial point as present study’s limitation and refer the literature that providing experimental validation as follows, doi: 10.3390/ma16093298, 10.1177/14657503221144810, and 10.3390/biomedicines11020427

A: We have made provided additional details regarding the limitations of our study; furthermore, we have added new references.