The Author's Response Regarding to Reviewer's Comments

Manuscript ID 91560

Number	Reviewer's Comments	Author's Responses
	Reviewer 1:	
	The article utilizes finite element analysis to assist surgeons in choosing the thickness of the femoral head and inner lining in clinical scenarios. While the finite element analysis process in the article is rigorous and meticulous, some concerns persist, and the article's integration with clinical practice is deemed insufficient. Specific feedback is outlined below:	The authors acknowledge the review report provided for our present submitted manuscript. We have been addressing the reviewer comments in the revised manuscript and response it in the rebuttal table.
1.	The absence of a discussion section in the article is noted, and it is recommended to enhance the text by incorporating clinical applications for a thorough analysis and interpretation of the results within the context of clinical practice.	Many thank to the reviewer for valuable feedback in this manuscript. The discussion part is included inside the "Results and Discussion" section. From a clinical perspective, examining contact behavior poses significant challenges. Consequently, we were unable to locate articles that examined contact behavior from a clinical practice. Nevertheless, we can assess the influence of this contact behavior by comparing it to the outcomes observed in clinical practice, where minimal contact pressure leads to minimal wear, and conversely. The discussion has been extended in the revised manuscript that explaining results in the present computational simulation on dual mobility bearing of total hip prosthesis would become orthopedic surgeon referral to choose suitable geometric for implant patient. Lower contact pressure and contact area along with smaller contact area would minimize failure based on contact behavior.

2.	An essential consideration is that the primary cause of failure in artificial joint linings is attributed to long-term wear rather than short-term direct pressure. Consequently, the mechanical finite element analysis should emphasize fatigue testing over static analysis.	Appreciate to the reviewer for their critical comments. It is right, wear becomes one of the major failure reasons of hip implant. However, the present study focusses on the short-term direct contact to investigate their contact behavior, not long-term wear behavior. Also, short-term wear behavior would illustrate running-in wear behavior based on Archard wear equation. Regarding fatigue testing, in the moment the authors can not do that since it is not in fit with aim of the present study for gain better understanding regarding contact behavior. The valuable recommendation from the reviewer would be addressed in the authors future research.
3.	Upon reviewing the results depicted in the experimental cloud chart (Fig 8), it is observed that all stresses concentrate in one area, while pressures at others ites register as zero. This discrepancy does not align with the realistic biomechanics governing forces on the human hip joint during movement.	Gratefully thank the reviewer comments for our present manuscript. It needs to be clarified, where Figure 8 is computational simulation results of contact pressure on bearing contact interface, not experimental cloud chart. We simulated only normal walking movements. When walking normally, the hip joint just contacts the middle of the cup, rather than all surfaces of the cup. This type of contact occurs as a result of non-conformal contact and the inclination of the hip joint at a 45-degree angle. Consequently, the contact pressure distribution visualization is limited to the central area of the cup and takes on a circular shape. All of contact area concentrated in one area due to the present computational model not incorporating range of motion, just load under gait loading. This simplification is one of our present limitations that needs to be addressed in the further.