

Dear Editors and Reviewer:

Thank you for your letter and for the reviewer's comments concerning our manuscript entitled "Anterior bone loss after cervical disc replacement: A systematic review" (Ref No. 56500). Those comments are all valuable and very helpful for revising and improving our paper. We have studied comments carefully and have made corrections. The revised portion are marked in red in our revised manuscript. The responses to the reviewer's comments are as follows. We hope that the correction will meet with approval. Once again, thank you very much for your comments and suggestions.

Sincerely yours,

**Responses to the reviewer's comments:**

**Reviewer #1:**

**Comment 1:**

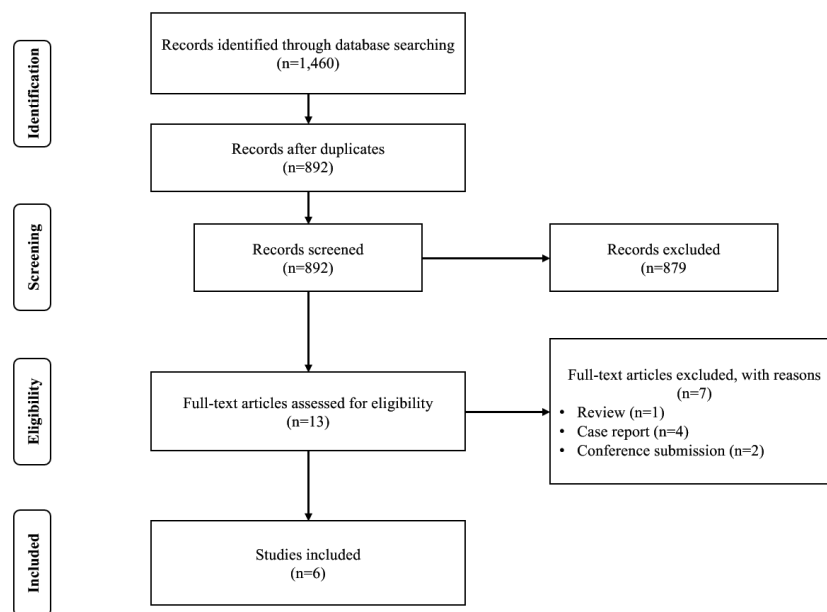
The paper is written as a systematic review, so I do not have the exact criteria of which studies were selected. How many studies were considered in total, how many were rejected and why?

**Response:**

Thank you for your useful comment. We did not present the detailed inclusion and exclusion criteria in this manuscript, and we are very sorry for this mistake. In the revised manuscript, we have described the process of literature search and added the following paragraphs into the "Materials and Methods" section (Page 4-5, marked in red):

The following keywords were used in searching: "bone loss" or "bone remodeling" or "bone absorption" or "osteolysis" or "implant loosening" or "implant migration" or "hypersensitivity" or "hyperreactivity", "cervical disc replacement" or "cervical disc arthroplasty". Articles published in English that involved periprosthetic bone absorption after cervical disc replacement were specifically identified. The references of all identified papers were manually reviewed in case that potential relevant studies were missed.

The search produced 1,460 published articles. We then systematically assessed the selected articles. The inclusion criteria were (1) periprosthetic bone loss occurred in the surgical segment after CDR and (2) bone remodeling occurred in the anterior/ ventral part of vertebral bodies. The exclusion criteria were (1) periprosthetic bone loss occurred in another part of vertebral bodies, (2) case reports, (3) reviews, (4) commentaries and (5) cadaveric or experimental studies. The results of the literature search were shown in Figure 1.



**Figure 1.** PRISMA (preferred reporting items for systematic reviews) flow diagram for selection of studies based on inclusion criteria during systematic review.

## Comment 2:

I would also like to mention the suspicion that the two Kieser studies (26/27) are largely based on the same cohorts, which certainly distorts the evaluation.

## Response:

Thank you for your comment. It is true as you said that the two Kieser studies may be largely based on the same cohorts. However, the Kieser study [26] included 1 more artificial disc, the Mobi-C disc. Therefore, in Table 2, the incidence of ABL of different kinds of artificial discs was calculated based on the Kieser study [26]. The reason we included the two Kieser studies was that they discussed different topics. The Kieser

study [26] focused on the risk factors of ABL. The Kieser study [27] talked about the prevalence and prognosis of ABL. Therefore, these two studies were kept in the revised manuscript. Thank you again for your wonderful comments.