Author’s response to reviews

Title: Do Skeletal Characteristics of Occlusion Correlate with Condylar Volume?

Authors:

Matteo Saccucci (m.sacca@hotmail.it)
Antonella Polimeni (matteosaccucci@fastwebnet.it)
Felice Festa (semtecc@tin.it)
Simona Tecco (simtecc@unich.it)

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Author’s response to reviews:

Dear Editor,

We tried to make all the suggested revisions as carefull as possible, and we think it improved thanks to their suggestions.
We hope this manuscript will be suitable for publication now.
Thanks for the opportunity to review it.
Sincerely
Matteo Saccucci

Reviewer’s report:
- Minor Essential Revisions
Thank you for submitting a wonderful manuscript. This study aims to evaluate the relationships among skeletal cephalometric characteristics and condylar volume, surface and shape, studied by means of CBCT. The Authors have made a remarkable work.

Here I have offered a few suggestions that may help strengthen your publication.

1) Title: “Do Skeletal Characteristics of Occlusion Correlate with Condylar Volume?” I think it may be better: “Do skeletal cephalometric characteristics correlate with condylar volume, surface and shape? A 3D analysis”. R: it was changed

2) The sample; 1st paragraph
The 3-D CBCT scans of 188 temporo-mandibular joints (TMJ) in 94 Caucasian young adults subjects (46 females and 48 males; mean age 24.3 ± 6.5 years), who did not show pain or dysfunction of TMJ (Tecco S et al. 2011) whose condylar morphology appeared reasonably normal, which was evaluated by a public clinic of head and facial medicine, were retrospectively examined. This phrase is to be rewritten. It’s too long, too many commas.
R: it was changed

3) The sample; 5th paragraph
Subjects were considered in skeletal class I if ANB angle ranged between 80° and 84°, : this is wrong, please correct
R: it was corrected

4) Method error analysis; 2nd paragraph I would eliminate table I, adding corresponding error data in the text
R: it was eliminated

5) Discussion; 1st paragraph
In this study we only included the data of young adult subjects within a limited age range (specify range exactly). specify range exactly
R: we specified it

6) Discussion; 4th paragraph
Condylar growth studies in humans using metallic implants have shown that, during the prepubertal or juvenile growth period, mandibular growth takes place at variable rates. Because of the increased intensity of condylar growth during the pubertal growth spurt, the pubertal growth spurt is generally considered to be the best time for orthodontic (I will add functional) treatment in patients with Class II malocclusions (Bjork A. 1963; Bjork A Skieller V 1972; Bjork A, Skieller V 1976).
R: we modified the discussion

7) Discussion; 13th paragraph
In a study with twenty-five subjects were submitted to hard diets, soft diets, or alternatively hard and soft diets, the condylar width was significantly greater within in the hard diet group than: eliminate “in”
R: it was eliminated, the discussion was adapted.

8) Conclusion; 2nd paragraph
Condylar size, both volume and surface, seems to correlate with the mandibular morphology, therefore influencing facial divergence and, at lower rate, skeletal class of a subject, mostly for the low mandibular angle subjects. I will write (in) instead of “for”
R: it was changed

REVIEWER 2
Reviewer's report:
The aim of this study was to determine the condylar volume in subjects with different mandibular divergence and skeletal class using cone-beam computed tomography (CBCT) and analysis software. The authors found that higher
condylar volume was a common characteristic of low angle subjects with respect to normal and high mandibular plane angle subjects and skeletal class also appears to be associated to condylar volume and surface. This is an interesting and well-planned study. However some comments to consider are listed below.

1. Introduction: The authors describe in the beginning of the text “The shape and volume of the condyle in young adults is considered to play an important role in the stability of long-term orthodontic and orthognathic therapies” with some references. However, the reason is unclear. The authors should explain the reason of the sentence, if necessary, with some references.
R: we tried to explain the sentence with references.

2. Material and Methods: The subjects were classified by ANB angle and GoGn-SN angle in this study. Please describe whether these items were measured on CBCT or cephalograms.
R: it was explained

3. Material and Methods: The authors should show the average and SD of ANB angle and GoGn-SN angle in the all groups respectively in the text or Table.
R: it was explained

4. Material and Methods: “Subjects were considered in skeletal class I if ANB angle ranged between 80° and 84°…” Please check the ANB angle, it’s too big.
R: it was checked

5. Material and Methods: “The 3D reconstruction” “The voxel size was set at 0.25.” Please add the unit of the voxel size.
R: it was added

6. Discussion: The authors should discuss the mechanism of the results that the condylar volume and surface area are different between the groups.
R: we modified the discussion

7. Some corrections are necessary for the References. Please check the instructions for authors of this journal carefully.
R: we checked it

8. Figures: The resolution of the figures is very low. Please improve it.
R: we made it

9. The legend and the quotation in the text of Figure 3 are missing.
R: we added it

10. Tables: It is unclear what the P values and asterisks mean and what they are compared with. Please describe, ex, *p<0.05 vs. …..group. If possible, the bar graphs might be better to understand the results for readers.
R: we modified the table

11. I suppose Table 1 is not necessary. The P value might be added in “Method error analysis” of the text.
R: we eliminated it

English language was revised.