Reviewer's report

Title: Facial Morphometrics of Children with Non-Syndromic Orofacial Clefts in Tanzania

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Reviewer: Demetrios Halazonetis

Reviewer's report:

The authors have made major changes since the original submission and the manuscript has been improved. However, some areas of concern remain:

Major compulsory revisions:

1- How were subjects selected? The authors list some inclusion/exclusion criteria but they do not specify if these subjects were randomly/consecutively selected from a larger sample, or if they were just the first ones to be identified. I assume that all subjects with clefts were included, but what about the control subjects?

2- Was a sample-size determination made? How was the sample size of 44/88 arrived at?

3- "with a least possible error (approximately 0.300mm)" : How was this assessed? Are there any references, or did the authors evaluate it themselves?

4- Were any subjects imaged twice, in order to evaluate method error? Were any images digitized twice? It seems not, so inter- and intra-observer error were not evaluated; this is a problem.

5- The authors do not report sex comparisons in the control group. Were males different from females? This is an important question because the groups are significantly different in sex distribution.

6- "Age was shown to explain 5.0%...": Age is related to size. Was there allometry? What was the relation between size and shape? Between size and age?

7- The authors report that they regressed shape on age, in order to standardize age. This assumes that there was a linear relationship between shape and age. Was this actually so? Perhaps a plot would be helpful here.

8- Figure 2 is very revealing as far as sample heterogeneity is concerned. I counted 26(?) Cleft subjects below the age of 20(?) months (i.e. 60%) , but only 3 Control subjects (3%). This is potentially a major problem for many reasons, including: a) very young subjects are expected to present with larger errors of the imaging procedure, b) significant shape changes are expected at very young ages, c) as the authors note: "facial adiposity may introduce uncontrolled variation into the sample". Perhaps the analyses should be re-done after
excluding these very young subjects; the control group is essentially not represented at ages below 20-30 months.

9- "The absence of apparent significant facial shape differences between the isolated CL and combined CL/P groups might be due to small sample size in the combined CL/P group in our study": Referring to Figure 5B, perhaps the authors would like to investigate if groups CI and CL/P are different, after removing group 'CL Bilateral'.

Minor revisions:

11- "The CL/P were aged 2 months to 13 years with a SD 39.5": I assume that SD is given in months. Please re-write the sentence so that the units of measurement are consistent and clear.

12- Table 1: Please right-align numbers ('8' should be below '5', not below '2'). Also, perhaps this Table could be augmented with the age of each group (average, SD and t-test comparing the two groups). Were the groups different regarding sex?

13- The authors report that age ranged up to 13 years. This is 156 months, yet Figure 2B shows that all subjects were well below 150 months.

14- What exactly is 'Shape Score' in Figure 2B?

15- "The landmarks were recorded by one observer": Who was the observer?

16- Table 2: "Midline inflection point of skin corresponding...". An inflection point is the point where a curve changes curvature from positive to negative (from convex to concave). Landmark #1 is not an inflection point, it is a saddle point (see http://en.wikipedia.org/wiki/Saddle_point). Same applies to #7. Landmarks #19, #20 are also not inflection points, but they are not saddle points either.

17- Why are the morphs of Figure 2 limited to the range 30 months to 150 months and do not include 2 months to 30 months?

18- "with the lips at rest": The authors should explain (in the text) how they located landmark #5 when the lips were not in contact.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.