Reviewer's report

Title: Influence of temporomandibular disorder on temporal and masseter muscles and association with occlusal contacts in adolescents: electromyographic study

Version: 1 Date: 28 March 2013

Reviewer: Annalisa Monaco

Reviewer's report:

- Major Compulsory Revisions
  1) Materials and Methods
  The study does not take into account any form of randomization or blindness. Could explain why?
  2) 2.3 Surface EMG recording:
  a) How did the “greatest tonus “could be measured” after the volunteer performed moderate intercuspation”? 
  b) Could the Authors assure that manually placement of electrodes “on the region of greatest tonus” is reliable and repeatable? 
  c) Was the placement of electrode blind? 
  3) 2.4 experimental protocol
  a) Some studies concerning the resting EMG of temporalis and masseter muscles reported statistical difference comparing closed with open eyes in TMD and myoptic patients. Did the Authors consider these conditions? 
  b) The Authors made the comparison and the interpretations of data off line. Why did they perform the MVC used to standardize the EMG before the recording of rest activity? Is it possible that any EMG effect on resting activity could be due to MVC?
  4) 2.5 EMG data analysis
  a) Why did they standardize resting and clenching EMG using MVC and chewing EMG using “the full wave-rectified signal” recorded during the same chewing task? Could they better explain the reasons.
  5) Results
  a) The figure 2 is missing
  6) Discussion
  a) Paragraph 2. One of the main results of the study is that no significant difference was found in number of occlusal contacts between with and without TMD subjects. The discussion doesn’t explain this data. The authors in paragraph 2 discusses the relationship between occlusion and TMD symptoms appearing to support the thesis that the premature or different number of occlusal
contacts in TMD patients can cause the signs and symptoms of TMD in growing individuals. How can the authors explain their result that seems the opposite of cited works?

b) Paragraph 3, 4. The cited work [37] the cited paper considers EMG parameters different from those studied by the authors. If they were using the same methods and their parameters should discuss in the Methods sessio. The [37] does not concern the resting EMG and clenching results do not seem comparable for the reasons given. The paragraph should be rewritten with an adequate bibliography.

c) Paragraph 5. I agree that the factors cited could influence the present result, but in Materials and Methods the Authors stated they checked for medical and psychological treatment, and for parafunctions and functional deficits. So I think that their sample could be consider balanced for psychological and parafunctional problem or the Authors have to consider these problems are limitations of their work.

d) Paragraphes 6,7,8. Again the discussion compare studies with very different method and parameters than those of the Authors.

In the discussion the Authors Moreover, the data showing the resting EMG of MSG (tab. 3) seems very difficult to accept. The data indicate values 10 times higher in MSG subjects: is this an error?

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
'I declare that I have no competing interests'