Study on the correlation between the transverse dimension of maxilla and obstructive sleep apnea

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We read with great interest the recently published work by Thuler et al. We congratulate the authors for further clarifying the correlation among the transverse dimension of maxilla, the upper airway obstructive site, and the severity of obstructive sleep apnea (OSA), which provides a new direction for us to diagnose and treat OSA. This is an important area of inquiry, but the investigation of the connection between these disease characteristics and the severity of obstructive sleep apnea remains incomplete and the conclusions of Thuler et al are still controversial.

OSA is a disease of intermittent hypoxia or apnea caused by repeated collapse of the upper airway during sleep. As far as we know, craniofacial disharmony is an important predisposing factor for the development of OSA. The hypoplasia of the maxilla leads to a decrease in pharyngeal airway space, resulting in upper airway obstruction. The study by Thuler et al found that maxillary measurements were related to the obstruction site detected, and there was no correlation between the maxillary measurements and the degree of collapse at the oropharynx, the obstruction caused by the epiglottis, or OSA severity. We affirm the author’s contribution in this regard; however, this conclusion is not cautious enough. First of all, it had been reported that craniofacial phenotypic characteristics of OSA might be different among different races. However, this research did not include different races and was also conducted as a single-center cross-sectional study, which might be a cause of bias. Second, the research focused only on patients with mild to moderate OSA in whom the disease had reached only a certain degree of severity. Thus, the phenomenon has only been partially demonstrated, as patients with severe OSA were not represented. Patients with mild to moderate OSA will ignore mild symptoms and not come to see the doctor, which also may indicate that the research conclusions are not so universal. Third, in the tables and figures published with the article, the authors did not divide OSA into a normal, mild, and moderate OSA groups, so they should be analyzed in one place. Therefore, we suggest that “there was no correlation between the maxillary measurements and the degree of collapse at the oropharynx, the obstruction caused by the epiglottis, or OSA severity” should not be such an easy conclusion. Fourth, the sample size of this study was relatively small, which itself may cause statistical differences, rather than the difference in the lateral size of the maxilla caused by the severity of patients with obstructive sleep apnea.

Therefore, we suggest that an expansion of sample size and external verification or even an internal verification would be more convincing. In addition, other indicators such as sex, body mass index and neck circumference can also be combined to build models.

CITATION

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SUBMISSION & CORRESPONDENCE INFORMATION
Submitted for publication July 20, 2021
Submitted in final revised form July 26, 2021
Accepted for publication July 26, 2021
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DISCLOSURE STATEMENT

All authors have seen and approved the manuscript. This work was funded by the Science and Technology Special Fund of Guangdong Province in 2019, Special Project for Major Science and Technology Innovation Platform and Project Introduction, No. 2019A201. The authors report no conflicts of interest.