Peer Review File

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Reviewer Comments

Comment 1: *It would be useful to include the population information (clinical vs. community) source of data (EHR vs. research/observational data) for the studies listed in table 3.*

Reply 1: Thanks for the reminding and we have added the population information and source of date.

Changes in the text: We have added population information in the number column, and added a new column about the source of data. (see Table 3)

Comment 2: *While the discussion of craniofacial imaging to screen for OSA is acceptable for completeness of review- pointing out the obvious limitation of this expensive and time-consuming screening strategy is not flexible.*

Reply 2: Thanks for the advisement, we have added the discussion about the limitation of craniofacial imaging as a screening tool. And accordingly, we have added a new section about the 3D scanning research cited in the manuscripts.

Changes in the text:

In addition, the geometric morphometrics can reveal the difference of craniomaxillofacial features between patients with OSAS and non-OSAS population. Patients with OSAS have relatively shorter, thicker necks and stronger retrognathism as well than those in the non-OSA population. (Page 13, line 280-284)

As a result, as 3D scannings are time-consuming and 3D scanning machines are expensive, they have the potential to explore the abnormal craniomaxillofacial features in patients with OSAS rather than a large-scale screening device. In contrast, patients' facial images appear to be a better tool for screening because of the easy accessibility of 2D facial images with ubiquitous mobile phones and deep learning algorithm. (see Page 14, line 289-294)

Comment 3: *Certain details should be added to the text regarding individual studies:*
line 194- which ECG features were used in this study?
line 204 what was the AUC for - AHI >5, 1o or other?
line 268- specify what is meant by "outstanding performance".
line 309- include numerical data for sensitivity and specificity.

Reply 3:

Thanks for your careful reading and helpful comments and we have revised the manuscripts and the certain details have been added.

For comment on line 204, the cited reference did not mention the AUC.

Changes in the text:

ECG-based features (heart rate variability features and ECG-derived activity counts) (see Page 9, line 194-194)

exhibited outstanding performance with an AUC over 0.95 in other diseases (see Page 13, line 267-268)
the sensitivity and specificity are 92% and 89%, respectively. (see Page 314-315)

Comment 4: *Since this paper is focused on perioperative screening, it would be worthwhile to explore which AHI threshold best correlates with increased risk of perioperative complications (5, 10, 15, other?) and highlight studies that include performance measures for screening AI tools for this threshold.*
Reply 4: Thanks for the advisement, several studies have confirmed that the severity of OSAS defined by AHI showed no correlation with the risk of perioperative complications. And for the sake of patients' safety, patients at risk for OSA should be identified before surgery. Screening tools discussed have the potential to identify them.
Changes in the text:
The severity of OSA defined by AHI has not been shown to correlate with risk for postoperative complications. (see Pages 4, line 83-85)
Considering the current performance and the availability of data, the prediction models based on anthropometric data combined with some simple physiological signals have more potential to become a feasible screening tool preoperatively. (see Page 18, line 384-387)