

Peer Review File

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Reviewer A

Comment 1: The authors described the location of the cervical vagus nerve related to CCA before thyroid surgery using sonography. This data is really helpful for vagus nerve identification and nerve monitoring during thyroid surgery. I think this article can be accepted for publication in Journal.

Reply 1: [The authors thank the reviewer for their time and effort and positive remarks.](#)

Reviewer B

The original article entitled “Preoperative Ultrasound Mapping of the Vagus Nerve in Thyroid Surgery” enrolled 527 patients who undergoing thyroid surgery (lobectomy or total thyroidectomy) with intermittent IONM. This study aimed to determine the incidence of a superficial vagus nerve using ultrasound and study possible clinical factors associated with an anteriorly-located vagus nerve (VN).

The followings are my comments:

Comment 1: This study had collected adequate patient number (527 patients) and used preoperative ultrasound to locate the VNs. Thyroid surgeons will be very interested in this topic and look forward to improving the safety of surgery or their IONM procedures based on the results of the research.

Reply 1: [The authors thank the reviewer for their time and effort and positive remarks.](#)

Comment 2: The authors must emphasize the value of this article. Articles that simply discuss VN variation are not uncommon and lack innovation. To discuss VN variations and associated clinical factors, there are not enough findings in current study. The Abstract in this article seems focusing on the application of IONM assisted thyroidectomy, but the discussion had too little information or suggestion for clinical applications.

Reply 2: [Thank you for the remark. We have added several paragraphs in the discussion to enhance the information regarding clinical applications, as suggested.](#)

Changes: [are detailed below in 3, 4 and 5.](#)

Comment 3: In terms of applying CIONM during open thyroidectomy, it is easier to approach the superficial type VNs and more difficult to place APS on the lateral/deep type VNs. Identifying lateral/deep VNs and avoiding unnecessary dissection to carotid sheath during applying CIONM can really make sense for surgeons.

Reply 3: [Thank you for the remark. We have added several paragraphs in the discussion to enhance the information regarding clinical applications.](#)

Changes: [We have added remarks in keeping with the reviewer’s suggestions on pages 5 and 6 \(highlighted as tracked changes in the revised manuscript\).](#)

Comment 4: For remote (endoscopic/robotic) thyroidectomy via different approaches

(transoral/ retroauricular/ transaxillary/ BABA), the VN variations had different clinical meanings. I would like to suggest the authors discuss more about this issue.

Reply 4: Thank you for the remark. We have added several paragraphs in the discussion to enhance the information regarding clinical applications.

Changes: We have added remarks in keeping with the reviewer's suggestions on page 6 (highlighted as tracked changes in the revised manuscript) and we have added references 32 and 33.

Comment 5: Because the approaches are not limited to superficial-deep, for different remote approaches or ethanol ablation/radiofrequency ablation, sometimes the lateral-medial axis is more important. In the case that the axis of carotid sheath may be distorted, the use of the CCA-IJV axis as a way of distinguishing positions may have a wider clinical applicability.

Reply 5: Thank you for the remark. We have added several paragraphs in the discussion to enhance the information regarding clinical applications.

Changes: We have added remarks in keeping with the reviewer's suggestions on page 6 (highlighted as tracked changes in the revised manuscript) and we have added reference 34.

Comment 6: The numbers and symbols in the text need to be unified: the number of digit after the decimal point; \pm signs; cm³; use 0.25 and avoid .25, etc.

Reply 6: Thank you for your thoroughness.

Changes: throughout the text, abstract and tables 1 and 2 (highlighted as tracked changes in the Word manuscript).

Reviewer C

Comment 1: In the method, authors should point out the location proved by the surgical explore.

Reply 1: Thank you for the remark. This actually relates to our previous study (reference 5) The vagus nerve was located surgically at the mid-level of the thyroid lobe, as during preoperative ultrasound.

Changes: We have not made any changes to the present manuscript.

Comment 2: In the discussion, authors can point the reasons for discordance between ultrasound and intraoperative finding.

Reply 2: Thank you for the remark. This actually relates to our previous study (reference 5). A discrepancy was found in 5% of cases on each side and was found more frequently in older patients. Patient morphology (more overweight in older patients) may be an explanation. Dissection of the carotid sheath can induce some sliding of the nerve and may modify the surgeons' appreciation of the location of the nerve. Finally, the location is somewhat subjective surgically and the subjectivity may explain the discrepancies between the radiologists' evaluation and the surgeons' evaluation.

Changes: We have not made any changes to the present manuscript.

Comment 3: The figure for position 4 has been used in the reference 5, and figure 1 is modified from reference 5.

Reply 3 and Changes: We have changed the figure (figure 5) for position 4, we have changed the legend (in red in the new submission) and we have added a comment in the legend for figure 1 that it has been modified from reference 5 (in red).