

Point-by-Point Response to Reviewers' Comments

*Note: The revised manuscript file is “**88371-Supplementary Material-revision.docx**”, NOT “**88371_Auto_Edited.docx**” because we modified the Auto_Edited.docx file.

Science editor:

Reply: Thank you so much for organizing all comments from reviewers and your kind comments. According to your and reviewers' comments, we have carefully revised the manuscript as below. Native English speaker, Dr. Awoniyi (co-author), has corrected all errors in grammar and format. Please see the revised manuscript.

Company editor-in-chief:

Reply: Thank you so much for reviewing our manuscript. According to your comments, we have improved our manuscript. Please see the revised manuscript.

Reviewer #1:

Reply: Thank you so much for reviewing our manuscript. Based to your suggestions, we have revised the manuscript as follows. We look forward to hearing your positive responses.

1. What were the scars of the surgical procedures in pt1?

Reply: Thank you for pointing out the areas in the background of patient 1. This patient had surgical scars in the midline abdominal incision for the right hemicolectomy for ascending colon cancer. We addressed this point in the physical examination portion of the manuscript. **Please see the revised manuscript, lines 117-118.**

2. What was the duration of follow up in pt 2?

Reply: Thank you for noting that point. This patient had no recurrence in the 12 years that were available for follow-up since the incident. We had added the explanation in the outcome and follow-up section. **Please see the revised manuscript, line 216.**

3. The study could have been continued by recruiting more asymptomatic individuals to document the effect of position and use of dynamic sonography.

Reply: We are in agreement with the recruitment of more asymptomatic individuals. We have included additional data of dynamic US from 6 individuals to this pilot study, total of 14 individuals including 5 patients with SMA syndrome and 9 healthy controls. The final result shows the similar results as the previous draft of the manuscript but improvements in statistical power - 1) the left and right lateral positions are significantly more effective than the supine position. 2) there is interpatient variation in the optimal position. We have carefully revised this analysis in the discussion part and Figure 7. **Please see the revised manuscript, lines 276-277 and Figure 7.**

4. Which are the pts who would benefit by non surgical means?

Reply: Thank you for your remarks about surgical treatment. Recent surgical procedures for SMA syndrome are effective but also highly risky for the elderly patients, especially cases with pulmonary complications. We believe that elderly patients would benefit from dynamic US with more effective non-surgical therapies and could be avoided from unnecessary surgery and anesthesia. We had noted this point in the discussion part. **Please see the revised manuscript, lines 285-289.**

5. Would use of water as a contrast help in imaging better during dynamic sonography?

Reply: Thank you for drawing attention to the important technical point. As you pointed out, it is sometimes difficult to detect the duodenum, especially in asymptomatic patients. Therefore, we typically use “drinking-ultrasonography test”, in which patients drink 200 mL of water. We have expanded the legend for Figure 7 and the discussion portion. **Please see the revised manuscript, lines 277-279 and legend for Figure 7.**

6. Before concluding the use of sonography in ideal positioning, more data may be required in both symptomatic and asymptomatic pts.

Reply: We truly agree with you. As you pointed out, the limitations of our pilot study are small sample size and retrospective analysis. As described above, we have increased the sample size, a total 14 individuals and show similar trends. Now we are conducting a prospective cohort study with a larger sample size. We have revised this point in the discussion part. **Please see the revised manuscript, lines 276-277, 284-285 and Figure 7.**

We're grateful for your guidance, which has enhanced the depth of our discussion.

Reviewer #2:

This case report is intriguing, and I would like to recommend its publication, provided the authors take my suggestions into consideration.

Reply: We appreciate your review and kind comments. According to your suggestions, we have revised the manuscript as follows.

Firstly, it is essential to underscore the advantages of dynamic ultrasound in the medical field. I suggest referencing the following two articles for additional context: <https://pubmed.ncbi.nlm.nih.gov/36055380/> <https://pubmed.ncbi.nlm.nih.gov/37290256/>

Reply: Thank you for providing the reference papers, which would enhance the depth of our discussion. We wholeheartedly agree that dynamic US has the advantage of real-time, dynamic evaluation, along with safe and quick access. It was enlightening for us (and for clinicians worldwide) to discover that dynamic

ultrasound can effectively identify abnormal motion patterns in the shoulder joint. We had added the references you provided. **Please see the revised manuscript, lines 83-85 and references 19 and 20.**

[19] Wu W-T, Lin C-Y, Shu Y-C, Chen L-R, Özçakar L, Chang K-V. Subacromial Motion Metrics in Painful Shoulder Impingement: A Dynamic Quantitative Ultrasonography Analysis. *Arch Phys Med Rehabil* 2023; 104: 260–269. [PMID: 36055380 DOI: 10.1016/j.apmr.2022.08.010]

[20] Shu Y-C, Lo Y-C, Chiu H-C, Chen L-R, Lin C-Y, Wu W-T, Özçakar L, Chang K-V. Deep learning algorithm for predicting subacromial motion trajectory: Dynamic shoulder ultrasound analysis. *Ultrasonics* 2023; 134: 107057. [PMID: 37290256 DOI: 10.1016/j.ultras.2023.107057]

Secondly, I recommend including a clear hypothesis regarding the use of dynamic ultrasound for evaluating SMA syndrome.

Reply: In accordance with your constructive suggestion, we have added the following statement to the introduction section: "the optimal position in SMA syndrome may vary for each patient, and dynamic observation of the SMA-Ao distance using ultrasound is a valuable tool for determining the optimal therapeutic position." **Please see the revised manuscript, lines 79-83.**

Thirdly, on line 86, please ensure that the severity of sleep apnea is reported explicitly.

Reply: We appreciate your attention to detail and have addressed the area of improvement in the patient's background information. The severity of sleep apnea in this case was mild. We have included this information in the history of past illness section. **Please see the revised manuscript, line 103.**

Fourthly, I appreciate the quality of the ultrasound figures. However, it's crucial to include a small subgraph in all ultrasound images to indicate the transducer's location.

Reply: We value your careful review and have taken your suggestion into consideration. To enhance clarity, we have added a body mark to all ultrasound images to indicate the transducer's location. **Please see the revised Figures 3 and 6.**

We hope these revisions address your concerns, and we are grateful for your guidance in improving our manuscript.