

Peer Review File

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Reviewer A

Nice case report with good cross-sectional images. I would advise a few minor changes.

38: "aberrant right subclavian artery" - why do you use 'ASRA' as opposed to 'ARSA'? You use ASRA throughout the manuscript. Please clarify.

Reply: Apologies, that was a typo throughout the manuscript. "ARSA" is the correct abbreviation.

Changes in the text: Corrected "ASRA" to "ARSA" throughout the manuscript:

- Abstract: Page 2 line 12
- Highlight Box: Page 3 line 3, page 3 line 9
- Case Presentation: Page 5 line 10
- Discussion: Page 7 line 4, Page 9 line 6
- Conclusion: Page 11 line 5

97: "has since made a full recovery" - an injection laryngoplasty never results in a 'full recovery'. It simply improves the voice but it never returns to normal. A full recovery implies resolution of the cord paresis, which in turn implies only a transient palsy ie. traction related. This should be clarified. An ENT can diagnose a full recovery on flexible laryngoscopy.

Reply: For this particular patient, we had immediate improvement in voice following the injection laryngoplasty, and his voice was normal and asymptomatic at one-year post-laryngoplasty. He was not re-scoped to confirm full functional recovery as he was asymptomatic, and the exact pathology of his dysphonia (i.e. traction related or otherwise) was not confirmed.

To clarify that the recovery was only our experience with this patient and not necessarily the result of all laryngoplasties, we've added a clarifier that the laryngoplasty was intended as a temporary measure, but that the patient's voice recovered and remained asymptomatic one-year after the procedure.

Changes in the text:

We've adjusted the text as above in the Abstract (page 2 lines 17-18) and the Case Presentation sections (page 5 line 23, page 6 lines 1-2)

116: "The left sided RLN loops posteriorly through the aortic arch at the level of the ligamentum arteriosum, before travelling superiorly along the tracheoesophageal groove and entering the larynx at the level of the first tracheal ring" - this is incorrect. Both right and left RLNs enter the larynx posterior to the cricothyroid joint. This is a fixed point at which the nerve can always be identified. Check your reference - you have either misunderstood or the referenced article is incorrect.

Reply:

Upon review of the references, it appears two factors have contributed to this issue: The reference for this statement was mistakenly attributed to Morais et al. (2), when it should have been to Bakalinis et al. (7).

Bakalinis et al. does claim that "the RLN ascends superiorly in the tracheoesophageal groove before entering the larynx at the level of the first tracheal ring." However, later they simply state that the nerve "travel(s) along the tracheoesophageal groove superiorly before entering the larynx."

The reason for this mixup was due to Morais et al. having a description of the normal course of RLNs while also showing a figure of a nerve inserting at the 1st tracheal ring. This had matched a claim of insertion into the first tracheal ring from Bakalinis et al., but since Morais et al. was published earlier, we attributed the statement in the manuscript to them.

Upon reexamination of the references, the figure in Morais was actually showing an NRLN variant, NOT the normal anatomy of an RLN, which led to the confusion and mistaken attribution.

Given Bakalinis et al. is the only paper to specifically reference the first tracheal ring, and they themselves subsequently change their description, we have re-written the sentences to remove reference to the tracheal ring and renumbered the reference to correctly reference Bakalinis et al.

Changes in the text: Rewritten the sentences to unify the descriptions of the left and right RLNs entering the larynx (Page 6 lines 21-23).

Removed "at the level of the first tracheal ring" and changed the reference from (1,2) to (1,7) on Page 7 line 1.

172 Changes to surgical approach - I think you should comment that RLN monitoring can be used in these tricky cases. Continuous nerve monitoring with a vagus nerve stimulator can be placed, or intermittent nerve stimulation. Both of these use a 'NIM' endotracheal tube. This should be mentioned, as it's common place in endocrine/ENT thyroid surgery.

Reply:

We'd originally refrained from talking about intraoperative nerve monitoring (IONM) as it was not utilized in our case and not the focus of our discussion. However, the literature surrounding this topic does indeed involve papers on IONM used in NRLN cases, especially in thyroid operations. Therefore, we've added two paragraphs describing this and highlighting some of the literature and its limitations compared to our proposed risk mitigation solution.

Changes in the text:

Added IONM acronym in "Embryological origins" section (page 8 line 22)

Added 2 paragraphs on the use of IONM (page 9 line 11 to page 10 line 12) with two new references: (16) Randolph et al., 2011 and (17) Bai & Chen, 2018 in "Changes to surgical approach" section.

Added (16) Randolph et al., 2011 and (17) Bai & Chen, 2018 to the "References" section (page 15 lines 3-10)

Changed the subsequent reference numbers for Beutler et al. and Kilburg et al. in the text (page 10 line 21 and line 25, page 11 line 3) to reflect the addition of the two new references.

Reviewer B

1. Highlight box:

The below point should be described what is new (What this manuscript adds?). Please modify the wording.

What is known and what is new? ↵

- The presence of an NRLN significantly raises the risk of a nerve injury.↵
- The aberrant vasculature (such as an ARSA) associated with a NRLN can be easily visualised on routine preoperative imaging.↵

Reply: Revised with the recommended changes.

2. Figures

- (1) The citations of all figures are missing, please check and revise.
- (2) Please provide the full names of "MRI" in the legend of Figure 1.
- (3) Please kindly provide Figure 1 in higher resolution.
- (4) Please define the full name/meaning of "a." in Figure 3 legend and "a.", "n." in Figure 4 legend.

Reply: I've attached higher resolution versions of Figures 1A and 1B, as well as modified versions of Figures 3-4 that define the abbreviations of "a." and "n." in the

figure itself.

All figures (including illustrations) are original, and are credited as such in the figure legends.

3. It seems there is no timeline in your manuscript. Please check items 7 in your filled reporting checklist.

Reply: Item 7 on the CARE checklist has also been updated.