

Peer Review File

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Reviewer A

Comment 1: The authors may consider providing a brief description of the literature search. Specifying search terms and types of literature included can increase the transparency about the sources of information on which the text is based and thus make the review more convincing.

Reply 1: Thank you for your input. We have added a section briefly describing the terms of our literature search.

Changes in the text: A brief methods section was added which reflects search criteria.

Comment 2: The authors may consider reporting the design of a study, whenever one is discussed, more consistently throughout the review.

Reply 2: Thank you for this recommendation. This has been more standardized throughout the manuscript where relevant. In conjunction with the changes to the text in response to comment 3, I believe this makes the overall manuscript more organized and cohesive.

Comment 3: The authors may consider creating a table that compares the most commonly used surgical approaches regarding surgical and functional outcomes.

Reply 3: Thank you for making this stylistic point. It will add structure and better organization to the manuscript

Changes in the text: Tables were added for each surgical approach which reflect the author, year of publication, study design, outcome measures, and findings.

Comment 4: The authors may consider writing a conclusion to summarise the most important aspects of the review and potentially identify areas for future research.

Reply 4: Thank you for this vital critique. A conclusion section including a brief summary and focus of future research has been added.

Changes to text: Conclusion section has been added to the manuscript

Reviewer B

Comment 1: The authors should consider following established guidelines for systematic review, such as PRISMA, in order to increase likelihood of acceptance for publication

Reply 1: Thank you for your comment. This manuscript was not intended to be a systematic review, but an invited manuscript to review the different methods of diaphragmatic plication and highlight the authors' experience with the operation.

Comment 2: The introduction with anatomy section is lengthy and meandering and does not inform the reader on what the goal of the review is. I would recommend cutting the introduction down to one page and providing one paragraph on background information about diaphragm paralysis. Readers should already know

the basic information described in your introduction, and if they do not, they can be referred to a textbook. Your introduction should instead be focused on the state of the current literature on the subject and the goal of your review.

Reply 2: Thank you for this recommendation. The introduction section has been condensed to one page with a single paragraph on diaphragm paralysis background. The anatomy section has also been condensed to be more relevant and concise.

Comment 3: I am not sure how is description of authors' preferred technique fit to this review article. And why this particular technique is preferable/superior?

Reply 3: Please see reply to comment 1. We are not stating that this technique is preferable/superior, but that it is the *author's* preference to perform the plication in this manner and share his technique with readers.

Comment 4: Any conclusion? What was the goal of this review?

Reply 4: Thank you for this critique; it is a valid question. We have added a conclusion section which summarizes our findings and identifies potential areas of future research.

Comment 5: How is this review different from a recently published systematic review on the same topic by Gritsiuta AI et al "Minimally Invasive Diaphragm Plication for Acquired Unilateral Diaphragm Paralysis: A Systematic Review"?

Reply 5: Please see reply to comment 1.

Reviewer C

Comment 1: first 2 paragraphs contain a few run on sentences which if were revised likely would make this section easier to read.

Reply 1: Thank you for your attention to detail. Run on sentences, comma splices, and other grammatical errors have been edited.

Comment 2: I would recommend condensing this information to eliminate redundancies and focus only on the key aspects of diaphragm anatomy that is relevant to plication.

Reply 2: The anatomy section has been shortened to include only relevant anatomy.

Comment 3: Line 79: "Lunch" parenchyma should probably be revised to lung

Reply 3: "Lunch" has been changed to "lung."

Changes in text: Lunch → lung

Comment 4: Line 86: Would rephrase "respiratory abilities"

Reply 4: This has been re-worded in the text.

Changes in text: " Denervation or idiopathic elevation of the hemidiaphragm leads to dyspnea by means of decreased contractile strength of the diaphragm"

Comment 5: Line 98-99: "Patients with elevated diaphragm should receive operative interventions when they become symptomatic." – not sure this statement

is true. Plication is typically reserved for symptomatic patients that have failed conservative measures (weight loss, pulm rehab, etc), which you mention later in Patient Selection section

Reply 5: Changes were made to be consistent with what appears in patient selection and initial management section

Text: "Patients with elevated diaphragm should trial conservative therapy prior to receiving an operation. If conservative methods have failed, and the patient remains symptomatic, plication should be considered."

Comment 6: Line 125: would change "plane" to plain

Reply 6: This has been re-worded in the text.

Changes in text: plane → plain

Comment 7: Line 126-127: "This should adequately show the elevated diaphragm." This sentence is unnecessary

Reply 7: This sentence has been removed.

Comment 8: Line 127-129: "If there are positive findings on initial imaging, follow-up computed tomography should be performed. This is used to limit the differential diagnosis and rule out other possible causes of elevated hemidiaphragm" These two sentences can be edited into one concise thought.

Reply 8: This has been re-worded in the text.

Changes to text: "If there are positive findings on initial imaging, follow-up computed tomography should be performed to rule out other causes of elevated hemidiaphragm"

Comment 9: Line 141: "FEV1 FVC ratio" I recommend changing to FEV1/FVC
Technique section

Reply 9: This has been re-worded in the text

Changes to text: "FEV1/FVC"

Comment 10: Line 169-170: "The camera port is placed in the 5th intercostal space or so, in the mid-axillary line" Revise this statement and eliminate use of "or so"

Reply 10: This has been re-worded in the text

Changes to text: "The camera port is placed in the 5th intercostal space in the mid-axillary line."

Comment 11: Line 172-173: "The left and right arm ports are typically placed in a lower interspace". Which interspace? If we are describing a technique, this important detail should be included.

Reply 11: We have clarified port positioning.

Changes to text: "The left and right arm ports are typically placed in the same transverse plane as the camera port, at least 9 cm away."

Comment 12: Line 191: Not sure that "bucking" is the actual medical term I would use in a manuscript

This section should be the most descriptive and detailed since this is the technique preferred by the authors.

Reply 12: Thank you for this comment. The term bucking has been replaced in the text.

Changes to text: "An emphasis should be placed on ensuring the transition from sedation is not complicated by violent contractions of skeletal muscle during inspiration"

Comment 13: Eliminate use of run on sentences and more concisely articulate/summarize the literature. Example below

"In a retrospective analysis of 18 patients at a single institution utilizing a single, buttressed, double-layered, to-and-fro suture with additional plicating horizontal mattresses as needed showed an increase in FEV1 from 73.5% pre-operatively to 88.8% of predicted post operatively, FVC from 70.6% to 72.3%, and decreases in dyspnea index from 8.1 to 7.1 six months post-operatively, although this finding was not statistically significant."

Reply 13: Thank you for this grammatical critique. Care has been taken to re-word and re-structure this section. Run-on sentences and comma splices have been removed.

Comment 14: Line 223: "The response following VATS is also durable" Needs revision. I assume the statement is trying to say that VATS plication is as durable as open ones, but that is unclear from the current statement.

Reply 14: Thank you for your contribution. This was meant as a comment on the retrospective study reported by Rombola et al. This was not a comparative study, but for clarity this line has been removed.

Changes in the text: Line removed.

Reviewer D

Comment 1: Although the authors give an extensive overview on the topic I very much miss a systematic approach to this topic, including:

-Which databases were searched to retrieve the reported studies?

-During which time frame?

-Which studies were included? (i.e. I suggest only to include comparative studies randomized/non-randomized but propensity-matched... case series with at least xx cases)

Reply 1: Thanks for your comments. This manuscript was not intended to be a systematic review, but an invited manuscript to review the different methods of diaphragmatic plication and highlight the authors' experience with the operation. A "methods" section has been added.

Comment 2: What about the costs - you are almost obliged to report on that. In my experience and according to other studies the robotic approach adds between 3'000 and 5'000 USD per procedure (for thymectomies its around 4'000 (Lieberman); for lobectomies 5'000 (Swanson)).

Reply 2: Price data have been included in comparative discussion section. Thank you for noting this was missing.

Changes in the text: Addition of cost data line 299-307

Comment 3: What I miss most is a good overview of the 'good quality' studies in a table - divided into the different approaches and their success rate (in the form of hospital stay, lung function improvement, complication rates, etc.)

Reply 3: Thank you for this comment. Tables have been created stratified by surgical approach. They reflect the author, year of publication, study design, outcome measures, and findings associated with each operative technique.

Changes in text: See Tables 1-5