

Peer Review File

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Reviewer A

- 1- The grammar should be improved.

Reply: We worked on that. If any more is found, please let us know.

- 2- In the section "key content and findings" many of the phrases belong in the background section. Line 14-17. From line 17-20 the text should be rephrased to highlight the findings of the review.

Reply: We re-write both background and key content see lines 7-12 and 18-24.

- 3- The section conclusion should be shorter - 1-3 lines only.

Reply: Done. See lines 26-27

Introduction:

- 4- *line 33. The only prospective clinical trials (Allewelt et. al. 2004 and Ott et al. 2008) report treatment success in around 70% of cases. I think these prospective clinical trials are more true to the real treatment success than the papers you cite, which refers to older case series. In addition, a lower "true" success of antibiotics treatment only highlights the need for invasive procedures.

Reply: We agreed with reviewer this both papers were more valuable and recent, we used both papers in our references and remove the old one.

Allewelt M, Schüler P, Böleskei PL et al. Ampicillin + sulbactam vs clindamycin +/- cephalosporin for the treatment of aspiration pneumonia and primary lung abscess. Clin Microbiol Infect. 2004 Feb;10(2):163-70.

Ott SR, Allewelt M, Lorenz J, Reimnitz P, Lode H. Moxifloxacin vs ampicillin/sulbactam in aspiration pneumonia and primary lung abscess. Infection 2008 Feb;36(1):23-30.

- 5- *line 45-47: Would rephrase the questions and move them to the end of the section and phrase them as hypothesis and aims.

Reply: The questions were removed, and the introduction was re-written. The goals of the review were mentioned at end of the introduction lines 71-78. We are open to any further such valuable recommendations.

Methods:

- 6- *line 81. Remove patients - mentioned twice.

Reply: Done.

- 7- *Regarding the literature review. I would like to see the actual phrasing you used when searching the databases - perhaps just as a supplement to the paper. In addition, how many papers did the search generate? did you screen the papers by title or abstract. Despite it being a narrative review I lack information on your research strategy. I do also think you should use "lung abscess OR pulmonary abscess" as this generates more results.

Reply: We used in our search:

1/1/19980-01/10/2023 period, English, Human, Case report, clinical study, clinical trial, metaanalysis, systemic review, review, RTC, observational study, multicenter study, adult 19+

We added to our search phrase pulmonary abscess per reviewer recommendation see methods (lines 81-93) and flow chart

endoscopic drainage AND percutaneous drainage tube drainage AND tube drainage AND lung abscess OR pulmonary abscess

- 8- line 87-126. I find the summaries of the papers to long. I would prefer shorter summaries that highlight their methods instead of describing them i details. When the summaries are this long I might just read the papers instead.

Reply: We agreed with the reviewer on the length of these summaries, and we tried to shorter them as much as we can to follow this recommendation. We still think that the readers need to know details about the different procedures techniques and approaches used by different papers to drain lung abscess without the need to go to the original papers.

- 9- *line 142-145. I don't understand this section. Please rephrase and correct the grammar.

Reply: It is rephrased. See line 163-166

- 10- *line 160-163. You cite the same paper three times in the same section. Please just cite the paper one time.

Done

Reply: Done. See lines187-190

- 11- *line 196. Why do you think the smallest tube size is to prefer? I would expect clotting in many cases? Is the tube size mentioned in all your references?

Reply: We think large chest has higher risk to develop BPF. The cases and studies which used small tube such as 7F tubes did not reports obstruction or different recovery from larger tubes, while old study with large tube reported significant numbers of BPF. We recommend chest tube 7-10 F and used references 5 and 35 to support it. See lines 230-231. We agree the smallest the tube the more clotting will happens, that why authors who used small tubes, they flushed it and lavage the abscess twice daily. The size of the tubes were not mentioned in all references. See Table 2-3.

- 12- I miss a more direct comparison between PTTD and ECD. Could you please make a table or figure illustrating the success rate and rate of different complications in direct comparison between the two procedures?

Reply: Thank you for this very important comment.

We added a paragraph to compare. See lines 256-261 and table 4.

	ECD	PTTD
Complication rate	2.6%	22.5%**
Mortality rate	0	6%*
BPF	0	3%
Pneumothorax	0%	5%
Hemothorax	0%	0.5%
Pulmonary artery injuries	0%	Reported

13- Discussion: I agree that BRF is a serious complication, but I think ref 23 have shown that BRF is a safe procedure, especially when performed without penetrating healthy lung tissue.

Reply: True, unfortunately avoiding healthy tissue is not always possible. The experience and the skills of the person doing the procedure always play a big rule in that. In addition, many of the patients with lung abscesses have unhealthy lung (such as emphysema). BFP in some of these patients may take long time and significant resources to heal.

14- I think you should put more effort into discussing the general limitation in the studies you have used. None of the studies are randomized and many are retrospective both with a great risk of bias. How should this affect our reading and interpretation?

Reply: Thank you for this very important comment. We tried to mention that on few occasions the retrospective and small numbers used which definitely will affect results. See lines 296-306 discussion.

15- In addition, no studies to my knowledge have made any clear recommendation on the size and placement of abscess' that should be treated with drainage.

The recommendation

Reply: Lines 167-168 the author recommends considering early drainage if abscess size 8cm or larger Lines 270-271 mentioned that abscess > 6 cm is less likely to respond to abx.

Abx always is first choice for every abscess. but when abscess in this range then provider may need to consider earlier drainage if no response to abx.

16- I lack a clear answer in the end to some of question you state at line 45-47. Is it possible to produce solid recommendations based on your review or what are we missing?

Reply: Due to the lack of randomized controlled studies and the nature of most studies in this review it will be difficult to produce firm recommendations. We think our review will be one step to bring attention to these options of treatment when the classic option does not work alone. We thin RCT will be the next step.

We think the review article recommendations can be summarized as follows.

a- Pulmonary abscess (PA) should show some response in 7-14 days otherwise drainage need to be considered.

- b- Pulmonary abscess the size of 6 cm or larger is less likely to respond and need to act earlier.
- c- Decision to do ECD or PTTD will need: multidisciplinary team (IR, IP, pulmonologist, thoracic surgeon, ID) to decide which way to go. The location and the bronchial signs, technology available to use such as 3D fluoroscopy, CT guided etc also will play its rules.
- d- Step of management also summarized in figure 1.

17- Overall, I highly welcome the paper. However I do think the paper should be improved significantly before publication. Your literature search should be clearly elaborate. Overall the text can be shortened and the written English improved so the key point of the review becomes clear.
Reply: We thank the reviewer for these valuable comments and recommendations. We think these recommendations helped to transfer this narrative review to different level.

Reviewer B

I am interested in your manuscript. But your manuscript needs to be revised of the manuscript structure, especially methods. Your manuscript needs to be clarify what is inclusion criteria and exclusion criteria and so on. And flow chart of this study is needed.

Reply: Thank you for the recommendation, we did follow. Please see the methods and flow chart (figure 2).

Reviewer C

The topic is of high clinical importance; however, the writing can be improved as above.

I congratulate the authors for having summarized concisely on the available literature on lung abscess, a not uncommon clinical condition that was under-investigated. The comparison between endoscopic catheter drainage (ECD), versus percutaneous transthoracic drainage (PTTD) was useful in informing clinical management of lung abscesses that do not respond adequately to antibiotics. However, I think the manuscript can further improve by including:

1. More detailed explanation on the factors that favors the use of ECD rather than PTTD, given its better safety profile. Other than abscess being more centrally located, is it necessary to have bronchus leading to the abscess on CT? Any details from Herth et al?

Reply: Thank you for valuable comments we added comparison between PTTD and ECD, and went to more details about the choices. We also recommended to use 3D fluoroscopy if available as a way to confirm the catheter location.

Lines 256-261, table 4.

2. Any ongoing clinical trial or study initiatives, say from clinical trial registries? The authors may elaborate on research directions.

Reply: We could not find any. We are open to add that to this narrative review if the reviewer is aware of any

3. There are many typos and grammatical errors throughout the manuscript, below are some of the examples. I will suggest the authors carefully read the whole paper and make the necessary

revisions.

1) lines 158/203/204/245/246/257 etc.: PDTT

2) line 204, of was 20%

3) line 257: with PDDT

Reply: We apologized for significant number of typos. We tried to correct all. Thank you for all the recommendations and comments.