

Dear Editor/Reviewers:

We thank the editor and reviewers of the *World Journal of Clinical Cases* for taking their time to review our article. We have made some corrections in the manuscript in accordance with the reviewers' comments. The changes are summarized below along with our point-by-point responses.

Comments and answer:

1. Reviewer #1:

The authors of the manuscript report a case of accidental esophageal intubation via a large congenital tracheoesophageal fistula (Type C) converted successfully into tracheal intubation by review of tracheal CT, to obtain important information about the type, size, position, and angle of TEF and find out the cause of the accident. The authors conclude that pre anesthetic anatomical evaluation of TEF using imaging studies is essential for successful tracheal intubation. Two opinions in this manuscript for reference only.

- 1) The information of the depth of ETT placed from the lip is also very important. Can this be learned from tracheal CT beforehand?

Answer: We sincerely appreciate your suggestion. In our case, the appropriate depth was 9.5 cm, similar to the value measured on the tracheal CT image. According to the strategy of airway management in a patient with TEF, initially, the ETT should be inserted deeply, beyond the fistula. However, this predicted length can be helpful when trying to adjust to the appropriate depth. Therefore, we have added the context and figure (on pages 8 and 12).

- 2) The discussion seems a little bit lengthy and can be concise.

Answer: We tried our best to remove the irrelevant data in the discussion section. We hope the deletions have made the discussion more concise and focused.

2. Reviewer #2:

For the case part:

- 1) Please confirm whether congenital heart disease should appear in "personal and family history"? I consider it's appropriate to be included in "History of past illness".

Answer: We appreciate your suggestion. We have revised the text accordingly (on page 4).

- 2) In the "Physical examination" section, whether or not the physical examination of the heart is normal? Please specify this.

Answer: A pediatrician confirmed that there were no abnormalities in the cardiac physical examination. (on page 4).

- 3) In the "Imaging examinations" section, please report the original imaging findings of the congenital heart disease.

Answer: We have added the description of echocardiography confirmed by a pediatrician (on page 5).

- 4) In the "FINAL DIAGNOSIS" section, the authors should make a final diagnosis of congenital heart disease and tracheoesophageal fistula, rather than describe the anesthesia process.

Answer: We appreciate your suggestion. In our case, the size of the ASD and PDA was small and expected to close spontaneously. These were only detected on preoperative echocardiography; cardiac physical examination showed unremarkable findings. Therefore, we would like to focus on tracheoesophageal fistula. We apologize for the confusion elicited by lack of information regarding echocardiography.

- 5) In the "OUTCOME AND FOLLOW-UP" section, the follow-up section is missing?

Answer: We have added information about the patient's postoperative condition (on page 6).

For the case part:

- 1) The patient underwent traditional tracheal intubation without "Fogarty catheter". The author pointed out the importance of CT evaluation before intubation. CT assessment

before intubation improves the success rate of traditional tracheal intubation? Please detail the clinical significance of this case.

Answer: In our case, esophageal intubation was unintentionally performed because of the large fistula. We predicted the possibility of this event based on the previous tracheal CT, which helped us to obtain a better clinical outcome. In airway management, TEFs can be managed faster if the cause of intubation failure and inadequate ventilation is identified sooner. We believe that preoperative awareness of anatomical conditions made it possible to assess the adverse situations earlier.

- 2) This is a rare case of a neonate with congenital heart disease and a tracheoesophageal fistula. However, as far as the field of anesthesiology is concerned, there are no difficulties to perform an intubation. In my opinion, this paper should focus on the standardized management and follow-up in the field of neonatal cardiothoracic surgery to avoid unnecessary issues in the similar cases.

Answer: As mentioned in our reply to Question 4 (case part), we consulted a pediatric cardiologist about this issue. She confirmed that ASD and PDA was small in this case, therefore the patient's physical examination of heart showed unremarkable state. In most of the cases like this, both ASD and PDA can be expected to be closed spontaneously. Therefore, cardiac condition of the patient seems to have less effect on the desaturation event. And, we would like to focus on tracheoesophageal fistula.

- 3) The authors claimed "However, it can be challenging in patients with TEF because of the anatomical abnormalities of the airway." Please detailed what challenges for patients with TEF can be addressed by this case? For traditional tracheal intubation or cutting-edge technology?

Answer: Unfortunately, we did not have a Fogarty balloon catheter or a bronchoscope with a small external diameter for pediatric ETTs, as we have indicated in the manuscript. Therefore, we tried intubation based on traditional strategies, and the large fistula became a high risk obstacle for safe airway management. Depending on the size, position and angle of the fistula may create various problems. We, therefore, present this case to emphasize the importance of preoperative imaging checkup. We have tried our best to revise the manuscript to enhance our focus on this topic.

- 4) The references need to be updated.

Answer: We have re-checked our references after revising the manuscript.

3. Reviewer #3:

- 1) In Abstract CASE SUMMARY "However, after inflating the ETT cuff, breath sounds were not checked on bilateral auscultation. Instead, gastric sounds were checked." and FINAL DIAGNOSIS "On auscultation, breath sounds were not checked bilaterally.", the authors did or did not checked the breath sounds? I believed the authors did checked the breath sounds but the breath sounds were not heard.

Answer: We apologize for the confusion; we have modified the sentences. We performed auscultation during the two intubation attempts, but no breath sounds were heard (on pages 2 and 5).

- 2) Did authors evaluate the role of video-stylet in such cases?

Answer: In our case, although we confirmed the vocal cords with video laryngoscope, esophageal intubation occurred due to the large fistula. However, it is impossible to inspect the subglottic space with a video laryngoscope. Therefore, we agree with you and appreciate your comments about the video-stylet. We assume that a video-stylet has a similar benefit to that of a rigid bronchoscope. Therefore, we have decided to describe these sorts of tools as 'rigid bronchoscopes' and we added the role of both flexible and rigid bronchoscopes (on page 6).

- 3) In Discussion paragraph 6 line 4-5: "Based on type C TEF illustrations in general, the trachea and esophagus are connected perpendicularly." Please add the reference. Also, the authors could check whether or not the angle of type C TEF is different in congenital TEF in neonates and secondary TEF in adults.

Answer: We have added the references for the sentence on page 7 as follows: Based on type C TEF illustrations in general, the trachea and esophagus are connected perpendicularly^[1, 13, 16].

Reference :
Spitz L. Oesophageal atresia. *Orphanet J Rare Dis* 2007; 2: 24 [PMID: 17498283 PMCID: PMC1884133 DOI: 10.1186/1750-1172-2-24]

Orphanet Journal of Rare Diseases 2007, 2:24

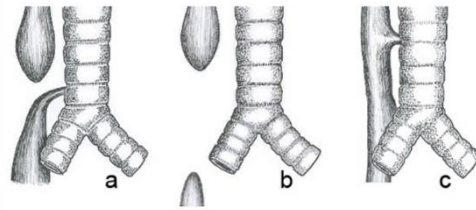


Figure 1
Common anatomical types of oesophageal atresia. a) Oesophageal atresia with distal tracheoesophageal fistula (86%). b) Isolated esophageal atresia without tracheoesophageal fistula (7%). c) H-type tracheoesophageal fistula (4%)

Reference :
Broemling N, Campbell F. Anesthetic management of congenital tracheoesophageal fistula. *Paediatr Anaesth* 2011; 21: 1092-1099 [PMID: 20723095 DOI: 10.1111/j.1460-9592.2010.03377.x]

N. Broemling and F. Campbell

Anesthetic management of congenital tracheoesophageal fistula

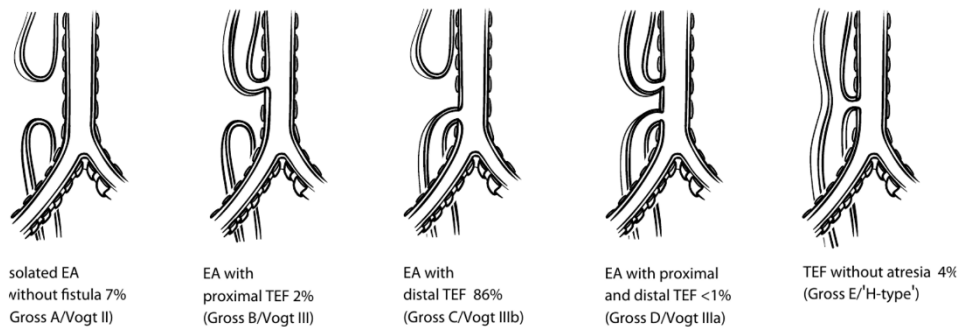


Figure 1 Anatomic classification and incidence.

Reference :
Lehavi A, Slijper N, Vachyan A, Steinberg R, Smolkin T. Esophageal intubation via a tracheoesophageal fistula-Type C. *PACCJ* 2016; 4: 64-66 [DOI: <https://doi.org/10.14587/paccj.2016.12>]

Discussion

Many pediatric anesthesia and pediatric surgery publications provide illustrations of the tracheoesophageal fistula classification, many of which schematic by nature. A classic schematic illustration of a type C fistula (figure A) may give a somewhat wrong impression of the distances and the angles between the trachea and the esophagus, suggesting an almost perpendicular insertion of the fistula to the trachea, making esophageal intubation almost impossible.

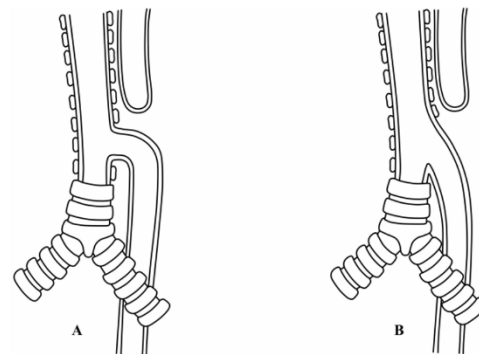


Figure A-B. A schematic drawing of a Gross Type C (Vogt IIIb) esophageal atresia and tracheoesophageal fistula. A: Classic illustration. B: A more anatomically accurate illustration.

In most of the adult cases, TEF occurs secondary to the conditions such as trauma, infection, prolonged endotracheal intubation or cancer. Therefore, it appears that the H-type TEF occurs between the normal esophagus and trachea. We have added some articles we searched (below this paragraph) about H-type TEF. In the sagittal view of CT, the angle of the fistula seems more perpendicular in adult type H TEF than type C TEF in neonates.

Reference :
Chou PR, Kao CN, Liu YW. Thoracoscopic Repair of Adult-Onset Congenital Tracheoesophageal Fistula Using a Polyglycolic Acid Sheet-Buttressed Stapler. *Medicina* 2022; **58**: 843
 [https://doi.org/10.3390/medicina58070843]



Figure 1. Preoperative and postoperative CT scans of the patient. (A) The axial view of pre-op scan showed a fistulous tract between the trachea and the dilated esophagus. (B) The sagittal view of pre-op scan showed the fistula at T2 level. (C) The axial view of the post-op scan six months later demonstrated a normalized esophageal diameter. (D) The sagittal view of the post-op scan showed no evidence of a residual fistula.

Reference :
Little BP, Mendoza DP, Fox A, Wu CC, Ackman JB, Shepard JA, Muniappan A, Digumarthy SR. Direct and indirect CT imaging features of esophago-airway fistula in adults. *J Thorac Dis.* 2020; **12**: 3157-3166 [doi: 10.21037/jtd-20-244. PMID: 32642237; PMCID: PMC7330784]

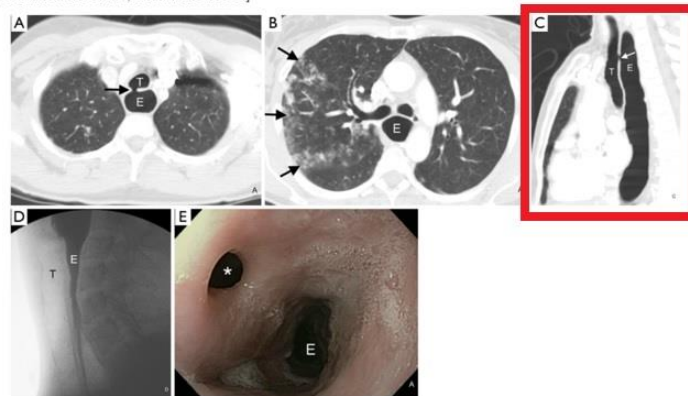


Figure 1 Small congenital H-type tracheoesophageal fistula (TEF) in a 51-year-old woman presenting with chronic, excessive belching. Chest CT (A,B,C) clearly demonstrates a direct connection (A and C, arrow) between the upper trachea (T) and upper esophagus (E). There is also marked air-filled dilation of the esophagus. Centrilobular ground glass opacities and patchy consolidation in the right upper lobe (B, arrows) are consistent with aspiration. Contrast esophagogram (D) performed prior to the chest CT was falsely negative. Endoscopy (E) confirmed the presence of the TEF (E, asterisk).

- 4) Figure 2 panel B and C are duplicated. Figure 3 and Figure 2 panel A are duplicated.
 It would be better if they are integrated into 2 figures.

Answer: **We have integrated the figures to Figure 2.**

- 5) Is there any perioperative photo of the TEF?

Answer: **Unfortunately, there are no perioperative photographic records of the TEF.**

4. Reviewer #4:

- 1) The authors describe management of TEF repair. The ETT was inserted under guidance using a VL but auscultation was not done to confirm the placement. This is a routine practice and reason for omitting such an important thing is not clear.

Answer: We apologize for the confusion in expression. We actually did the auscultation in every attempts, but no breath sounds were heard. We revised the sentences to avoid misunderstanding (on pages 2 and 5).

We hope the revised manuscript is now suitable for publication in the *World Journal of Clinical Cases*. We thank you once again for the constructive review of our manuscript.

Sincerely,

Saeyoung Kim

Corresponding author