Peer Review File
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Reviewer A

The authors should be congratulated for their success regarding the congenital pulmonary airway malformation in an infant aged 15 months and weighed 8.6kg. This surgery is challenging. The surgical techniques are intriguing with particular knacks. Below are some concerns.

Comment 1) Title: a more focused title is needed. Suggestion: add "surgical techniques" in the title. Replace "thoracoscopic" with "video-assisted thoracoscopic". Replace "in infants" with "in a 15 months-8.6 kg infant".

Reply 1) In accordance with the reviewer's comment, we have changed the title: Surgical techniques of video-assisted thoracic surgery for congenital pulmonary airway malformation in a 1-year-3-months (8.6kg) infant (p.1 lines 1-2)

Comment 2) Abstract: some vital information is missing. Please add background/gap information. Highlight the innovation/unique point too. In the end, more detailed/the most significant knacks are encouraged. List the full name before using an abbreviation.

Reply 2) In accordance with the reviewer's comment, we have added the following text to the abstract (p.2 lines 7-12): Although we believe VATS lobectomy for CPAM in infants is feasible, there are some specific *Knack and Pitfalls* in pediatric thoracic surgery; 1) learning and improving the ligation technique of vessels and bronchus, 2) familiarity with the anatomical location of vessels and bronchus, 3) Adjusting the position of the bronchial blocker for one-lung ventilation.

Comment 3) Keywords: ""video-assisted"" is encouraged.

Reply 3) We have reflected this comment (p.2 lines 15)

Comment 4) Introduction: highlight more specific finding. E.g. based on previous experience, highlight the younger age and lighter weight (15 months, 8.6kg). Highlight the feasibility in this more challenging context.

Reply 4) In accordance with the reviewer's comment, we have added the following text to the introduction (p.3 lines 15-16, p.4 lines 1-6): Although some reports recommended

surgical intervention earlier than our recommendation (5, 6), thoracoscopic resection should be avoided if there are technical difficulties since bleeding from pulmonary artery could be fetal in pediatric surgery. Here, we present our surgical experience of complete video-assisted thoracic surgery (VATS) left lower lobectomy for CPAM in a 1-year-3-months old boy (8.6kg) and introduce some specific *Knack and Pitfalls* in pediatric thoracic surgery.

Comment 5) Discussion: add a discussion regarding the preoperative CT scan. Though this manuscript focuses on the surgical technique, as the patient is an infant with only 15 years old, there is controversy regarding the application of CT (or low-dose CT) which may affect decision/accuracy on surgery afterwards.

Reply 5) You have raised an important point; however, we believe that CT is necessary for an accurate assessment of cystic lesion in CPAM. We have revised the comment to reflect your raising a question (p.11 lines 2-6): Compared to adults, children are at a greater risk for developing radiation-associated cancer (14). Of course, radiation exposure of children needs to be kept in mind, however we believe CT is necessary for an accurate assessment of cystic lesion in CPAM. Particularly in children, the preoperative CT image is often unclear due to incomplete breath holding during CT scanning. In such cases, sedation during CT and high-speed imaging with helical CT are promising.

Reviewer B

CPAM is a rare disease in thoracic surgery, and its first-line treatment is mainly surgery. In this case, a child who are 1 year and 3 months old and less than 10kg undergo thoracoscopic surgery. The small chest cavity and soft tissue of the child rasie technical challenges to the surgeon. The operation was excellent, with clear operation ideas and simple steps. It has certain reference value:

Comment 1) Whether asymptomatic CPAM need surgery is still controversial. literatures recommending surgery for asymptomatic CPAM should be listed.

Reply 1) Thank you for your suggestion. You have raised an important point. In accordance with the reviewer's comment, we have added the following text to the comment (p.8 lines 2-16, p.9 line 1): Surgical management of asymptomatic CPAM is a highly contested issue in pediatric thoracic surgery. Despite several studies, the timing of surgical treatment and resection procedures has not been clearly defined. The reason why asymptomatic patients with CPAM need surgery in infants is the prevention of infection and malignant conversion of the cystic wall. Wong *et al*. reported that nearly all of the asymptomatic patients with CPAM at birth developed symptoms by their later pre-school years or even during adolescence (7). Additionally, Takeda et al. reported that infants tolerate lobectomy extremely well with compensatory lung growth so that total lung volume and gas exchange capacity return toward normal during somatic maturation (8).

For the above reasons, when the condition of patients is stable without any symptoms or infections, we recommend that they undergo surgery after the age of one for appropriate growth. In addition, we propose that C-VATS lobectomy may be feasible if they are older than 18 months or weigh more than 10 kg from the viewpoint of vessel/bronchial dissection technique and differential ventilation during anesthesia (4).

Comment 2) The postoperative recovery is not detailed enough. Such as postoperative drainage, chest tube removal time, postoperative chest radiograph, etc., are not mentioned. It is recommended to add.

Reply 2) In accordance with the reviewer's comment, we have added the following text and postoperative X-ray figure to the clinical summary (p.5 lines 1-4): The patient had no postoperative complication and the postoperative chest radiograph showed good expansion of the left upper lobe (*Figure 1C*). The chest drainage tube was removed on the 3rd postoperative day and the patient discharged on the 7th postoperative day.

Comment 3) Although lobectomy is the standard procedure in CPAM, sublobar resection might be the alternative option in selective cases.", whether there is literature support?

Reply 3) We agree with you and have incorporated this suggestion throughout our paper. We have added the following text to the comment (p.10 lines 10-16, p11 line 1): Although lobectomy is the standard procedure in CPAM, anatomical segmentectomy might be the alternative option in selective cases which cystic lesions spread to multilobar to avoid pneumonectomy. In most cases, non-anatomical resection seems unsatisfactory, as some of disease is macroscopic and not grossly visible, making complete resection difficult (12). However, anatomical segmentectomy is applicable only when preoperative imaging and gross findings at the time of surgery shows the cystic lesion is limited to the segment to be resected (12, 13).

Reviewer C
Comment 1) Is lymph node dissection necessary during the benign lesion surgery?

Reply 1) We think lymph node dissection is not necessary for CPAM. However, the hilar or interlobar lymph nodes are often removed to safely approach the vessels and bronchus since they are often enlarged in infants. So that, there is no change in the manuscript.

Comment 2) It would cause more nerve damage to choose 5.6.8 intercostal for three-port thoracoscopic surgery. Is it possible to reduce the operation holes?

Reply 2) This is a valid assessment of minimal invasive surgery. We think it is possible to

reduce the operation port. Even if single port surgery for CPAM also might be possible. In accordance with the reviewer's comment, we have added the following text to the comment (p.11 lines 13-16, p.12 lines 1-2): We performed left lower lobectomy with 3-port VATS in this case because our standard procedure is 3-port VATS. As uni-portal VATS have become more popular in recent years (16), surgical resection for treatment of CPAM may be performed by uni-portal VATS. However, the safety and indication of uni-portal VATS for CPAM are still controversial. This intriguing possibility warrants future experimental studies.

Comment 3) In the case of incomplete pulmonary fissures, how to define the boundary of the diseased lung to ensure that the disease does not remain.

Reply 3) You have raised an important point. It's a very challenging case. Actually, I have no experience on such case. Perhaps, the intravenous injection of indocyanine green (ICG) may be applied in order to accurately dissect the collect pulmonary fissures. There is no change in the manuscript.

Comment 4) The surgery did not present the intravenous injection of indocyanine green as described in the manuscript.

Reply 4) I have never performed intravenous injection of ICG in CPAM. It might be useful method to identify the collect pulmonary fissure and segmental plane. However, in our case, intravenous ICG injection was not necessary. There is no change in the manuscript.

Comment 5) Whether the timing of surgery for this disease can be further discussed. What would be the benefit and affects for the patient's subsequent growth of the surgery in infancy? Will it increase the complications due to poor cooperation after surgery?

Reply 5) Thank you for your suggestion. You have raised an important point. In accordance with the reviewer's comment, we have added the following text to the comment (p.8 lines 2-11): Despite several studies, the timing of surgical treatment and resection procedures has not been clearly defined. The reason why asymptomatic patients with CPAM need surgery in infants is the prevention of infection and malignant conversion of the cystic wall. Wong *et al*. reported that nearly all of the asymptomatic patients with CPAM at birth developed symptoms by their later pre-school years or even during adolescence (7). Additionally, Takeda et al. reported that infants tolerate lobectomy extremely well with compensatory lung growth so that total lung volume and gas exchange capacity return toward normal during somatic maturation (8).