

Peer Review File

Article information: <https://dx.doi.org/10.21037/jtd-22-192>.

Reviewer A:

Comment: This manuscript comprehensively examines stapler updates and provides a general review regarding improved control of air leaks. It is a well-organized review.

Reviewer B:

Thank you for the valuable manuscript.

Comment 1: It might be worthwhile to define the characteristics of reviewarticle. However, would you make an account for brief conclusion/message for the readers?

Reply 1: We added to the Introduction the characteristic as well the aim of the paper. After each paragraph we summarized – if applicable – a short message on the discussed topic.

Comment 2: Personally, I am very curious on strengths and weaknesses between Signia™ Powered Stapling System with Tri-staple™ technology versus ECHELON™+ Powered stapler with GST 45 mm green reload. Is there any difference/ signature between the two products?

Reply 2: We have presented the available literature on each topic. To date, there is limited published information (only one study, sponsored by one of the cited manufacturers) on a comparison between the above-mentioned products. Thereafter, an Expert Opinion by the authors would be inappropriate in a Clinical Practice Review.

Comment 3: I thought that it would be very helpful to the readers if the authors check grammars and typos to improve readability. In several parts in manuscript, it's not easy to understand and to read. To improve readability, it needs to proofread the manuscript. Furthermore, the authors must keep instructions for authors. Please, carefully check the draft one more time, especially in the area of references. For example, the (Fig. 2) should be changed as “(Figure 2)”. In my humble opinion, if circumstances allow, the abbreviation should be avoided in the area of “Abstract”. If a report has more than three authors, the first three authors should be listed followed by “et al.”, including comma at the end of the last of authors.

Reply 3: The manuscript has undergone a new proofreading process. The abbreviation “Fig.” was changed into “Figure”. We have revised all the references according to the JTO Guidelines for Authors.

Reviewer C:

Comment 1: Thank you for giving me this kind of precious opportunity to review this manuscript.

This manuscript addresses the relationship with pulmonary air leak using the buttressed stapler or powered stapler.

This paper is important for understand their background and history.

The authors presented the references which buttressed stapling is not significant effect.

Besides, Takamochi et al * reported that the efficacy of buttressed stapling in reducing the rate of air leak in patients undergoing pulmonary lobectomy could not be clearly demonstrated, although Endo GIA Duet TRS had discontinued. As conclusion, I think that evidence to reduce PAL is not clear.

*Kazuya Takamochi et al. prospective randomized trial comparing buttressed versus non-buttressed stapling in patients undergoing pulmonary lobectomy. *Thorac Cardiovasc Surg.* 2014 Dec;62(8):696-704. doi: 10.1055/s-0033-1363295.

Reply 1: We considered the paper of Takamochi et al. but we did not cite it and report its results for one reason: the “trial closed early with 100 patients because the manufacturer (Covidien Inc.) recalled the Duet TRS based on reports of 13 serious injuries and 3 fatalities following pulmonary resection using the Duet TRS in routine clinical practice (<http://www.fda.gov/Safety/Recalls/ucm288098.htm>),” and it may make no sense to discuss the use of a device which has been withdrawn from the market.

Comment 2: It has reported that powered stapler is superior than normal stapler about operative hemostasis. However, realistically powered stapler is more expensive than normal stapler and I am afraid that it is contrary to sustainable development goals. I think that no problem about haemostasis if the grasping of normal stapler is performed slowly.

Reply 2: In Germany, powered staplers are sold by the manufacturer for a similar price as the corresponding mechanical device. On the other hand, we agree with the Reviewer about a sufficient tissue haemostasis for both mechanical and powered stapler.

Reviewer D:

Comment: This manuscript entitled "The role of new staplers in reducing the incidence of air leak" described the difference between powered sutures and manual firing forces for air leaks. The theme was interesting, but I felt that the discussion was inadequate and no clear conclusions were drawn. Also, figures were not necessary and tables which was necessary for the paper was lack.

Reply: We reported an overview of the current evidence on the topic, basing our statements on the available scientific reports. After each paragraph we summarized – if applicable – a short message on the discussed topic.

Reviewer E:

I'd like to thank the Editors for providing me with the chance to evaluate the article "The Role of new staplers in reducing the incidence of air leak". Dr. Marra and Dr. Yankulov had described the current techniques of staplers to prevent the incidence of prolonged air-leak. This work is well-written and provides readers with well-organized information. I found a recent development in stapling technique in this paper, which might be useful information for Journal of Thoracic Diseases readers. I'd like to make a few suggestions.

Comment 1: It would be more informative if the real pictures of applying reinforcement materials such as bovine pericardium or ePTFE for easier understanding.

Reply 1: Thank you for your suggestion. However, such pictures do better fit to a "How to do"-paper.

Comment 2: Is there any novel techniques or materials developed for reducing prolonged air-leak? If there is, please introduce some in the revised manuscript.

Reply 2: For this Clinical Practice Review we have considered only new techniques, devices and materials, which are currently used in the clinical practice, and have excluded experimental items.

Comment 3: Some grammatical errors should be corrected.

Reply 3: The manuscript has undergone a new proofreading process.

Reviewer F:

Comment 1: The authors have reviewed the available literatures of stapling for resection of lung tissues in thoracic surgery and presented the role of new staplers in reducing the incidence of air leak. Stapling devices are important tools for pulmonary resection and prolonged air leak (PAL) is a common complication after pulmonary resection and is associated with increased hospital length of stay after lung resection surgery. Thus, it is important for thoracic surgeons to discuss occurrence and duration of air leak and PAL after stapling

using several devices. In general, this review is logical and interesting, and discussed a hot topic in thoracic surgery. However, the following points should be addressed.

The authors described usefulness of the reinforced stapler cartridges and powered staplers. However, the reviewer thinks that one of the key requirements for the use of staplers is the need to find a balance between adequate tissue compression time and the risk of increased tissue tearing and excessive tensile strength. In addition, it is the most important to select the cartridges: gray (closed staple height, 0.75 mm), white (1.0 mm), blue (1.5 mm), gold (1.8 mm), green (2.0 mm), and black (2.3 mm) when using Echelon stapler, etc. Stapler cartridge choice really does matter in significantly reducing PAL complications and lowering overall costs in thoracic surgery procedures.

Reply 1: We added the suggested issue of cartridge selection to the first paragraph.

Comment 2: Line 81, To date, there is limited published information on the above-mentioned technologies. surgical stapler manufacturers innovated the technologies of Tri-staple™ reloads and Echelon™ stapler reloads because they offered more secure staple formation compared with the Universal reload by several experiments. Actually, the papers have been published in another field such as gastrointestinal surgery. Thus, the authors should cite more papers and discuss those new technologies.

Reply 2: Thank you for the suggestion, but we have excluded some studies investigating stapler in non-pulmonary surgery, according to the review topic.

Comment 3: Did the authors mention about Echelon Endopath™ Staple Line Reinforcement?

Reply 3: We did not find any published evidence on ECHELON ENDOPATH™ Staple Line Reinforcement with polyglactin buttress, neither in PubMed nor cited in the Relevant Package Inserts of the product.