

# The experience of using Endo GIA™ Radial Reload with Tri-Staple™ Technology for various lung surgery

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**Abstract:** Endo GIA™ Radial Reload with Tri-Staple™ Technology (RR) is a device for colorectal surgery. However, with its rounded staple line, Radial Reload is suitable for various lung surgeries. We use the device for lung wedge resection, and cutting bronchus in lung lobectomy. The total number of use counts up to 56 fires, and all fires came out well.

**Keywords:** Radial Reload; stapler; video-assisted thoracic surgery (VATS)

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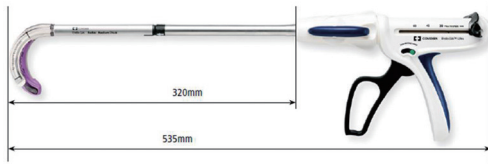
## Introduction

Endo stapler is now dispensable for video-assisted thoracic surgery (VATS) (1). The indication of VATS is spreading, and now various operations are performed with VATS. We always need some consideration to perform operation safely and certainly with the change of operational procedures. Endo GIA™ Radial Reload with Tri-Staple™ Technology (RR) is a very useful for various lung operations including VATS. RR is a device that is first designed for colorectal surgery. The most particular characteristic of the stapler is its rounded stapling line (*Figure 1*). Moreover, the head part of the stapler is designed perpendicular to shaft of the device, therefore, input vector of stapler is turned 90 degrees for its output (*Figure 2*). It is very useful for lung surgery.

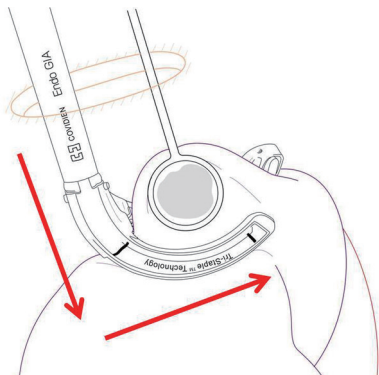
## Materials and methods

RR is suitable for resection of tumor which exists at periphery of lung. We usually seize a tumor with a device such as PN catch. Then, we mostly use straight type stapler to cut around PN catch with enough surgical margin. During this manipulation, we often experience the difficulties that occur because of the direction of stapler. A straight type stapler's head mobilization is limited and it

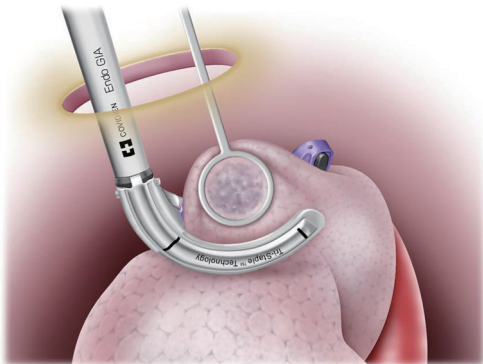
makes it difficult to frame an ideal staple line. Therefore, we sometimes make another port to insert a stapler to make a correct staple line. We use RR in this situation. RR is able to be inserted through the same window which PN catch is inserted with parallel direction. This feature makes the first fire to be formed easily as ideal design. Also, its rounded shape enables to resect along the line of PN catch taking enough surgical margin (*Figure 3*). This first fire mobilized the tumor, therefore, the second fire becomes easier to make (*Figures 4,5*). RR is the only stapling device that has this characteristic. The important point is that input vector of stapler is changed perpendicularly, so RR can be inserted parallel to PN catch. Because it is necessary to perceive the tumor by touch in order to assure safety margin, the RR is effective for its rounded shape. RR is also useful for resection of bronchus in lung lobectomy. Right angle shape of RR is suitable for cutting a bronchus. Whereas TA™ is a widely used device for closing bronchus, RR has a merit for its cutting ability (*Figures 6,7*). Because RR has a wider width compared to other types of staplers, we need to release layers of bronchus for longer distance than using others. This manipulation is not so easy and seems like a demerit for cutting bronchus. However, we think that this manipulation leads to define resection of #11 lymph node. When cutting bronchus, it is necessary to check if the device is not holding surrounding tissue, especially



**Figure 1** Endo GIA™ Radial Reload with Tri-Staple™ Technology (RR).

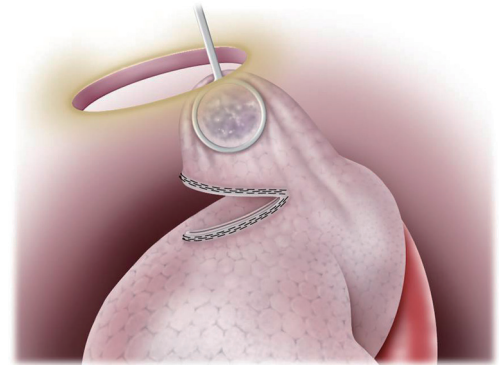


**Figure 2** The most particular characteristic of the stapler is its rounded stapling line. Moreover, the head part of the stapler is designed perpendicular to shaft of the device, therefore, input vector of stapler is turned 90 degrees for its output.

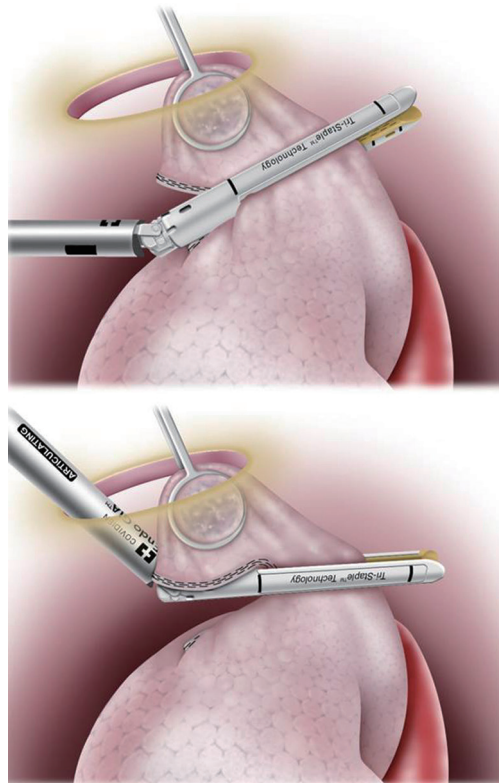


**Figure 3** Endo GIA™ Radial Reload with Tri-Staple™ Technology (RR) is able to be inserted through the same window which PN catch is inserted with parallel direction. And its rounded shape enables to resect along the line of PN catch taking enough surgical margin.

pulmonary artery behind it. Unlike its rounded shape, the cutting line of RR for bronchus is almost straight and not curved. Looking at the line, it is clear that we do not have to worry about unwilling effect caused by the shape of stump (Figure 7).



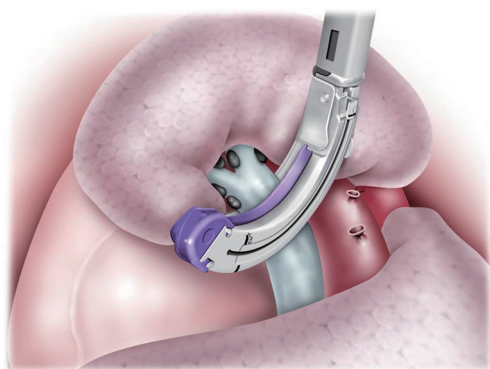
**Figure 4** The first fire mobilized the tumor.



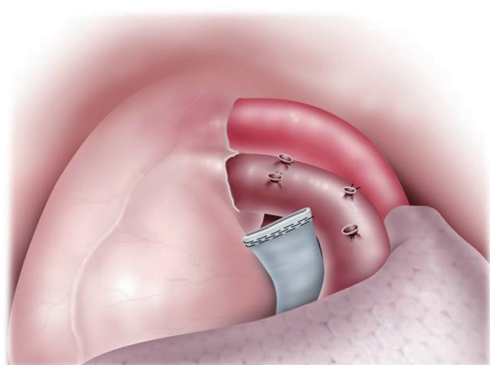
**Figure 5** The second fire becomes easier to make.

### Results

We used RR for 56 fires in lung surgery. Its breakdown is that 40 for lung wedge resection, and 16 for cutting bronchus (Table 1). There is no complication until now.



**Figure 6** Endo GIA™ Radial Reload with Tri-Staple™ Technology (RR) is also useful for resection of bronchus in lung lobectomy.



**Figure 7** Unlike its rounded shape, the cutting line of Endo GIA™ Radial Reload with Tri-Staple™ Technology (RR) for bronchus is almost straight and not curved.

### Comments

RR is a device that is very useful for lung surgery especially with VATS. And this real operation's procedure which had ruptured into the right atrium (*Figure 8*).

### Acknowledgements

*Disclosure:* The author declares no conflict of interest.

**Table 1** RR for 56 fires in lung surgery

| Types                  | No. of patients, fires |
|------------------------|------------------------|
| Disease                |                        |
| Primary lung cancer    | 20                     |
| Metastatic lung cancer | 3                      |
| Other                  | 12                     |
| Surgery method         |                        |
| Wedge resection        | 40                     |
| Cut of bronchus        | 16                     |
| Complication           | 0                      |



**Figure 8** Endo GIA™ Radial Reload with Tri-Staple™ Technology for various lung surgery (2). Endo GIA™ Radial Reload with Tri-Staple™ Technology (RR) is able to be inserted through the same window which PN catch is inserted with parallel direction. The first fire mobilized the tumor. The second fire with RR. Water sealing test: No air leakage. RR is also useful for resection of bronchus in lung lobectomy. Using RR with cutting lower bronchus. The staple line is not rounded. Water sealing test: No air leakage. Available online: <http://www.asvide.com/articles/309>

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