

MEETING ABSTRACT

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# Prolonged air leak following lung resection - does Tri-stapler™ technology improve the incidence?

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## Background/Introduction

Prolonged air leak following lung resection leads to delayed discharge and increases risk of infection. The incidence of prolonged air leak (defined as greater than 7 days) is approx. 9% in the U.K. (SCTS Cardiothoracic Surgery database 2011). The Covidien Tri-stapler™ technology (Covidien, Mansfield, MA) claims to improve air leak rates following lung resection through improved vascularity at the suture line. We started using these staplers in August 2012.

## Aims/Objectives

To determine if Covidien Tri-staplers™ improve prolonged air leak incidence through comparison with the incidence in previous two years (i.e. August 2010 - July 2012).

## Method

The departmental database which collects and validates data prospectively was used to find patients having non-pneumothorax lung resection surgery between August 2010 and July 2014. They were divided into two groups - Group 1 (EndoGIA Autosuture™; August 2010 - July 2012) and Group 2 (Tri-stapler™ device; August 2012 - August 2014). The groups were then compared for pre-operative variables and postoperative outcomes.

## Results

A total of 401 patients were included - Group 1 with 242 patients (102 males - 42.1%) and Group 2 with 159 patients (72 males - 45.3%). Mean age was 67.5 years (Group1) and 67.6 years (Group2);  $p = 0.92$ . COPD incidence was 59 (24.4%) patients in Group 1 and 66 (41.5%) patients in Group 2;  $p < 0.001$ . There was no significant differences in the incidence of prolonged air leak in Group 1 ( $n = 20$ ; 8.3%) and Group 2 (13; 8.2%);  $p = 0.98$ .

Significant infection prolonging hospital stay was more frequent in Group 1 ( $n = 17$ ; 7%) than Group 2 ( $n = 18$ ; 11.3%) but this was not statistically significant ( $p = 0.15$ ). Mean post-operative stay was similar in both groups (7.9 days for Group 1 and 7.1 days in Group 2;  $p = 0.30$ ).

## Discussion/Conclusion

The outcomes for the two groups were similar with no significant advantage from usage of the Tri-stapler™ technology.

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