Reviewer's report

Title: A Novel Approach to Control Air Leaks in Complex Lung Surgery: A Retrospective Review

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Reviewer: John Snider

Reviewer's report:

The question posed was well defined.
The methods are appropriate and well defined, replication however by the author's own admission has historically been difficult. This is a concern.
The data are sound, controls are appropriate.
The manuscript adheres to relevant standards.
The discussion and conclusions are balanced.
Title and abstract are clear and accurate.
The writing is acceptable, see minor comments below.

Major Compulsory Revisions
None

Minor Essential Revisions

The first sentence on page three refers to institutional experience that ProGel is completely reabsorbed from the lung surface one month after surgery. How is the author aware of this fact at his institution were there re-explorations?

Page 8, duration of chest tube drainage is reported as mean and median values, the associated p value mentioned is ambiguous. According to Figure 2 both measures (mean and median) were significantly different, however the p values for the means and medians were not the same.

The author leverages the single surgeon, single center design of this study to eliminate many variables. While this is useful in this report, widespread acceptance will usually be reserved for a prospective, multicenter trial demonstrating not only a statistical validity but equally important a clinical advantage. Real practice acceptance of such a product will rely on ease of use, reproducibly meaningful results and to at least some extent economic impact.

The author compares the current results to previous studies, notably to a previously published study by Allen et al, reference 2. He acknowledges a smaller percentage of anatomic resections (lobectomy/segmentectomy :28% in the manuscript vs. 58% in the Allen paper). These cohorts appear dissimilar.
To address this concern the author cites a report in Chest in 2000 by Stephan et al in which prolonged air leaks are not correlated to type or magnitude or pulmonary resection. Does this current manuscript purport to address prolonged air leaks? If so what is the definition of a prolonged air leak?

It appears that this report with its very impressive results (both statistical but even more so clinical) seems to address short term or very short term air leaks not prolonged in the usual sense.

Finally noting these excellent clinical results, perhaps the author could describe more completely the surgical technique, particularly those utilized when an air leak is evident. Also were their any post operative management strategies which also enhanced the outcomes.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

Dr. Snider has participated in prospective and retrospective studies supported in part by Neomend. Previously was a consultant to Neomend, with no current financial relationship with any organization.