Reviewer’s report

Title: UK pneumonectomy outcome study (UKPOS): a prospective observational cohort study of pneumonectomy outcome

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Reviewer: john alvarez

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This is a unique and important study in that it covers the field of UK practice in the performance of what I will call "first time" pneumonectomy for lung cancer. How truly representative it is as the authors claim in page 6 of "representing UK practice as a whole "is open to debate. Of 35 Centers in the UK, 7 did not submit data, and a further 4 centers did not perform any first time pneumonectomies; given that the range was 2-38 per center I would calculate that about a third of centers either did not submit or did not perform these operations and perhaps only a third of centers actually do about 1 per month. How many surgeons per center actually do this operation is not available. Yet that is valuable data to know.

A problem I have is the definition of major complications that the authors have adopted. Namely the category of treated arrhythmias. What solid data do they base or possess that the development of AF or flutter requiring some pharmacological agent is truly a major complication of its own accord? Does it prolong hospital stay? Possibly but it is unknown from the data given. If this treated arrhythmia category was excluded from the definition would the effect of age be as important in their final conclusions? I would suggest that truly major complications are given briefly in page 8: ARDS, myocardial infarction, bronchopleural fistulae, empyema, return to theatre ( ? reason i.e. bleed, leak etc), pneumonia. If these complications are considered can the authors still state that there is a 5 fold increase in the rate of major complications in patients older than 62 (page 11)?

Importantly I would ask the authors what explanation(s) do they have given that the number of right pneumonectomies account for only about a third of all cases, yet one would expect it to be near equal given the distribution of lung cancer on a right versus left basis? Is it that UK surgeons are selective in whom they perform right sided pneumonectomies? This is important as in Table 3 the p value was a likely clinically significant 0.08.

Also it is important if the data exists/available as to why with contemporary imaging modalities and one would hope that the practice of on table bronchoscopy prior to resection has not died out, such a high conversion rate occurred from lobectomy to pneumonectomy (32.7%). What were the reasons given? Did these conversions have a poorer outcome compared with the "non conversions" (i.e. added blood loss, BPF etc etc)?
What is also a very important finding from this study is the issue of epidural analgesia. This has been suggested to be a problem area for these patients by Deslauriers' group several years ago. Can the authors ascertain any reason for this to be so? Is it likely to be from silent aspiration? increased need for fluid, inotropes to defend against hypotension? Can the authors suggest should it be continued as they correctly point out alternative methods of analgesia appear equally effective but with much less risk?

This manuscript otherwise meets the criteria given (from 1-7) in your guidelines if the authors can provide added commentary and data to the questions posed I believe it will be very worthy of publication.

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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

None