Reviewer’s report

Title: Safety and complications of medical thoracoscopy in the management of pleural diseases

Version: 0 Date: 19 Apr 2018

Reviewer: John Corcoran

Reviewer's report:

Thank you for the opportunity to review this manuscript. Medical thoracoscopy is used with increasing frequency across a wide range of international centres, and data (retrospective or otherwise) on such a large cohort of patients has the potential to be extremely informative. I hope my comments and suggestions as follows will prove useful when revising the manuscript.

GENERAL

The manuscript would benefit from the significant input of a proof reader or editor who can improve the use of language throughout. Simply taking the first paragraph of the Background section, "Irish" should be "Ireland"; the following part of the sentence would read better as "…Dr Samuel Gordon reported its use to examine the pleural space of a girl with empyema…"; the final sentence of the paragraph does not really make sense at all although I understand what the authors are trying to say (i.e. that medical thoracoscopy is less invasive and expensive than a traditional surgical approach). Accessing such an editing resource would undoubtedly improve the quality of the manuscript and ensure its messages are conveyed clearly and adequately.

BACKGROUND

Paragraph 2 - do not finish with the phrase "and other procedures"; this is vague and unhelpful. It is sufficient to say "…including pleurodesis, treatment of pleural infection, forceps lung biopsy, and sympathectomy."

Paragraph 3 - the authors report that there are few trials reporting complication rates from medical thoracoscopy. This slightly contradicts the earlier discussion based on data presented in reference #14; there are also meta-analyses and systematic reviews the authors may wish to consider (e.g. https://www.ncbi.nlm.nih.gov/pubmed/23928984, https://www.ncbi.nlm.nih.gov/pubmed/23168883)
METHODS

Paragraph 2 - this study covers a substantial period of time (25 years) and the way in which patients are worked up for thoracoscopy, and indeed the way in which thoracoscopy is used, is likely to have evolved substantially over this timeframe. The authors probably need to spend some time outlining how their practice has changed - e.g. did all patients undergo ultrasound examination in 1992, since this seems unlikely? Severe COPD needs to be defined (i.e. spirometry criteria; exercise capacity etc.) What does uncontrollable cough mean - is this an observation immediately prior to or during the procedure? How is the fused pleural space identified (e.g. ultrasonographic absence of lung sliding)? If ultrasound is being used to identify adhesions then appropriate references for how this technique is used should be cited.

Paragraph 5 - there is no mention of the analgo-sedation regimen used by the authors in their centre. This needs to be described in detail - for example, which drugs were used (and range of doses); who was responsible for administration (physician vs. anaesthetist vs. ODP etc.) Pneumothorax induction appears to have been carried out in a subset of these patients, and the technique(s) used needs to be outlined as part of the methodology - e.g. is air allowed to enter the pleural space passively or is an insufflation (positive pressure) method used?

Paragraph 7 - with respect to the use of thoracoscopy in pleural infection, it is not clear to me if and how the authors carried out decortication in a subset of their patient population - this needs to be discussed in more detail, notably the technique(s) used.

RESULTS

When discussing the complications seen with medical thoracoscopy (which is the primary focus of this paper), the authors should divide them into major and minor categories - these can be defined either by the authors themselves, or based on prior publications (e.g. reference #14).

DISCUSSION

Paragraph 1 - it is not appropriate to describe medical thoracoscopy as minimally invasive, when compared to other pleural interventions carried out by physicians. The authors should outline in this opening paragraph whether medical thoracoscopy is a safe procedure, based on the data they have presented, and where any potential for increased risk might lie (e.g. particular interventions or patient characteristics).

Paragraph 2 - this is extremely lengthy and contains a great deal of clinical information and physiological theorising that does not contribute particularly to what I think is striving to be the central message of this manuscript (i.e. the safety profile of medical thoracoscopy). Much of this
paragraph can and should be removed from a future revision of the manuscript. The authors also reference the use of a pleural manometer? Is this part of their standard practice in the context of pneumothorax induction for thoracoscopy? Providing more detail on the techniques used as part of the methods section would resolve this.

Paragraph 3 - again, lung laceration appears to occur in the context of pneumothorax induction; the failure to describe how this is carried out in the methods section compromises the interpretation of subsequent results. How would the authors detect air leak from the laceration during the procedure if it was occurring in the context of an already partially collapsed lung and open pleural space? How much pleural fluid is "sufficient" to allow trocar insertion? How is the trocar introduced? Again, the methods section needs to be expanded to discuss the technique by which thoracoscopy is carried out in more detail.

Paragraph 4 - again, I do not think there is much value to be added by discussing the details of individual cases. REPE is a rare complication, as shown in the authors' series, and instead this part of the discussion should focus (briefly) on the postulated risk factors for the development of this complication and its subsequent management.

Paragraph 5 - the authors highlight the risk of severe pain developing during pleurodesis; again, the missing detail on how analgo-sedation is managed during procedures would allow this observation to be considered appropriately.

Paragraph 6 - did the authors carry out bulla electrocoagulation (presumably for recurrent pneumothorax) without concurrent pleurodesis? This therapeutic strategy needs to be justified if so, given the published evidence base (including that from VATS or surgical procedures) demonstrating that it is pleurodesis that is the key intervention when looking to reduce the risk of future recurrence.

Paragraph 7 - if discussing the place of NSAIDs in the context of pleurodesis, the authors should cite https://www.ncbi.nlm.nih.gov/pubmed/26720026 as a high-quality RCT relating to this area of practice. The recommended use of physical cooling needs to be supported by an appropriate reference. The risk of port site infection is greatest in those with pleural infection - presumably these patients would already be on antibiotics? There is no evidence I know of to support the use of prophylactic antibiotic therapy post-thoracoscopy otherwise.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess
Are the conclusions drawn adequately supported by the data shown?
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No

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I am able to assess the statistics

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Please indicate the quality of language in the manuscript:

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