CORRESPONDENCE

Should bronchoscopy be advocated to study airway remodelling and inflammation in adults with cystic fibrosis?

We read with interest the article by Regamey *et al* who reviewed the relationship of airway remodelling to inflammation in cystic fibrosis (CF).[1] The authors suggested that endobronchial biopsy studies are useful for studying airway remodelling in CF. Four studies were conducted in 91 children who underwent bronchoscopy for clinical reasons or annual routine surveillance. These studies confirmed that airway remodelling in CF appeared early in life and this is indeed of more than academic interest. However, while the authors have previously shown and claimed that biopsy procedures are safe in infants and small children, the ethics of the procedure in children have been discussed by others.[2]

We would like to raise concerns about the procedure in adults as well. From 1987 to 2011, Regamey *et al* found five independent studies in which bronchial biopsies were performed in only 25 adults with CF.[1] Although no major complications were reported in this small number of patients, several issues limit the use of endobronchial biopsies in adults with CF. Bronchoscopy is not the usual practice for microbiological assessment in adults with CF, in whom sputum examination is recommended.[3] In a study comparing bronchoalveolar lavage (BAL) with induced sputum in 11 adults with CF having well-preserved lung function, the authors found no benefit of BAL for studying inflammatory cells and mediators.[4] Because three subjects experienced prolonged fever and/or hypoxaemia, the authors concluded that BAL cannot be recommended in the research setting.[4] As bronchoscopy is not part of routine practice in adults with CF, if performed, it should be done mostly as a research procedure in which risks and benefits are to be weighed carefully: CF is a progressive disease in which structural abnormalities increase with age.[5] Enlarged bronchial vessels immediately adjacent to the airway epithelium are found in adults with CF (see figure 1). Rupture of these abnormal bronchial blood vessels into the airway lumens could be responsible for major haemoptysis, which occurs mostly in adults with CF. Although no major haemoptysis following bronchial biopsy has been reported, we suggest that the risk of biopsy-related bleeding is increased in adults with CF.

In conclusion, bronchoscopy with BAL or bronchial biopsies is an invasive procedure that is not recommended in clinical practice and may result in serious complications in adults with CF, especially in subjects with advanced lung disease. We suggest that a cautious approach is necessary when considering studies using BAL or bronchial biopsies in adults with CF.

Pierre-Régis Burgel,[1,2] Clémence Martin,[1,2] Isabelle Fajac,[2,3] Daniel J Dusser[1,2]

[1]Pulmonary Department and Adult CF Centre, Cochin Hospital, AP-HP, Paris, France; [2]Université Paris Descartes, Sorbonne Paris Cité, Paris, France; [3]Physiology Department, Cochin Hospital, AP-HP, Paris, France

Correspondence to Dr Pierre-Régis Burgel, Service de Pneumologie, Hôpital Cochin, 27 rue du Faubourg St Jacques, Cedex 14, Paris 75679, France; pierre-regis.burgel@cch.aphp.fr

Competing interests None.

Contributors All the co-authors contributed to the writing of this manuscript and approved its final version.

Provenance and peer review Not commissioned; internally peer reviewed.

Accepted 23 August 2011
Published Online First 11 October 2011

Thorax 2012;**67**:177.
doi:10.1136/thoraxjnl-2011-200824

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Authors' response

We thank Burgel and colleagues for their valuable comments.[1] We agree that a cautious approach should be adopted when considering the use of bronchoscopy and biopsy in cystic fibrosis (CF) research. As stated in our review article,[2] we have confirmed the safety of endobronchial biopsy in children and infants with CF. Reassuringly, we have encountered no complications even in children with advanced lung disease. We advocate the use of endobronchial biopsy to investigate mechanisms of airway remodelling events and their relationship to infection and inflammation in children, but claim no experience of bronchoscopy in adult CF. It would be inappropriate for us to comment on the role of bronchoscopy in adults.

Nicolas Regamey,[1,2,3] Peter K Jeffery,[2] Eric W F W Alton,[2] Andrew Bush,[1] Jane C Davies[1,2]

[1]Department of Paediatric Respiratory Medicine, Royal Brompton Hospital, London, UK; [2]Department of Gene Therapy, National Heart and Lung Institute, Imperial College London, London, UK; [3]Department of Paediatrics, University Hospital of Bern, Bern, Switzerland

Correspondence to Nicolas Regamey M.D., Division of Paediatric Respiratory Medicine, University Children's Hospital, 3010 Bern, Switzerland; nicolas.regamey@insel.ch

Competing interests None.

Contributors All authors contributed to this letter equally.

Provenance and peer review Not commissioned; internally peer reviewed.

Accepted 5 August 2011
Published Online First 11 October 2011

Thorax 2012;**67**:177.
doi:10.1136/thoraxjnl-2011-200913

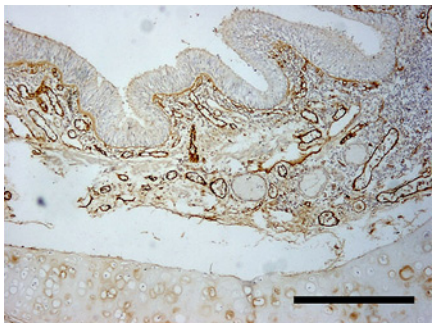

Figure 1 Representative photomicrograph demonstrating bronchial vascular remodelling in a cartilaginous airway obtained at transplantation from an adult with cystic fibrosis. A formalin-fixed paraffin embedded section was immunostained with an antibody to the endothelial marker von Willebrand factor. Numerous enlarged and tortuous airway blood vessels (brown colour) are found immediately adjacent to the airway epithelium. Bar=200 μm.

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The cloud of pulmonary embolism during COPD exacerbation

We read with great interest the paper of Chang *et al*,[1] published recently in *Thorax*. We totally agree with the fact that 'cardiac involvement may be an important determinant of prognosis in COPD exacerbations'. In their study, Chang *et al* found that patients presenting with COPD exacerbation (defined as dyspnoea, cough or sputum purulence, respiratory failure—Po_2<60 mm Hg or Pco_2>45 mm Hg—or change in mental status due to COPD) experience a worse prognosis if they also have high levels of troponin T and/or NT-proBNP.