

must be adapted to the severity and extension of the disease.

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The authors have disclosed no conflicts of interest.

DOI: 10.4187/respcare.03972

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Excessive Dynamic Airway Collapse in the Critical Care Setting

In Reply:

We read with great interest the letter of Bastos et al¹ describing both the value and limits of mechanical ventilation for the treatment of severe excessive dynamic airway collapse (EDAC). Their case, in addition to our previously published case² and other reports, raises some important questions with regard to the optimal management of ICU patients with severe EDAC.

First, it is important to diagnose expiratory central airway collapse in an ICU patient with predisposing conditions (such as asthma in the case of Bastos et al¹ or Sjögren's syndrome in our case), developing acute respiratory failure with a need for mechanical ventilation, or persistent or difficult weaning from mechanical ventilation. As highlighted by Murgu and Colt,³ such a condition is relatively frequent, but one suspects that it is underdiagnosed and poorly managed in some instances. In the critical care setting, bronchoscopy remains the best approach to recognize and assess the degree of narrowing (including its dynamic component, if any). Moreover, it allows us to distinguish between EDAC and tracheobronchomalacia. However, special attention should be given to standardization of the procedure (which could preferentially include the recording of video clips) and the reports.⁴⁻⁶ This is of particular importance both for individual patient care and for development of multi-institutional or collaborative studies or registries.

Other diagnostic approaches such as imaging studies or pulmonary function studies can complete the bronchoscopic evaluation, but with some limitations in the critical care setting. Dynamic computed tomography studies are difficult to perform in mechanically ventilated patients, but comparison of end-expiratory and end-inspiratory acquisitions could, in some cases, add additional information, such as in our patient, by the demonstration of a possible expiratory posterior compression of the intermediate bronchus by parenchymal lung cysts.² Impulse oscillometry has recently been found to be a good correlate with clinical symptoms in subjects with central airway obstruction and is able to discriminate between variable and fixed central airway obstruction.⁷ Theoretically, such a method could also be proposed and evaluated in patients on controlled mechanical ventilation.

At the end of the diagnostic process, every effort should be made to objectively describe the morphologies and etiologies of EDAC, as well as the degree of functional impairment, extent of disease, and severity of airway collapse. We suggest using the FEMOS (functional status, extent of abnormality, morphology, origin, severity of airway collapse) classification system developed by Murgu and Colt,³ both for individual decisions and therapeutic evaluations and for allowing multi-institutional registry participation or collaborative studies.

Finally, for a given patient, all therapeutic option components, including bronchodilators, disease-specific drug therapy if any, positive-pressure ventilation, and airway stenting, should be considered. These should be viewed as complementary to each other. The management algorithms proposed by Murgu and Colt³ seem to be an attractive approach.

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The authors have disclosed no conflicts of interest.

DOI: 10.4187/respcare.04075

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