

## CORRESPONDENCES

## Dynamic laryngeal narrowing in COPD may have effects on the trachea

Dear Editor,

Dyspnoea and exercise intolerance in patients with COPD have a wide variety of aetiologies, with dynamic hyperinflation and resultant loss in inspiratory reserve volume recognised as important mechanisms.

Baz *et al*<sup>1</sup> show that dynamic laryngeal narrowing is present in patients with COPD and hypothesise that this generates intrinsic positive end-expiratory pressure (PEEPi), serving to 'splint' open the airway. Dynamic laryngeal narrowing may indeed be the chief mechanism, but there may also be other aspects to consider. For example, it may be possible that PEEPi represents a compensatory response to distal airway obstruction and to more central tracheal obstruction.

As noted by Baz *et al*, in relation to laryngeal function in COPD, the exact nature of tracheal function in patients with COPD has also not received any detailed scrutiny. Excessive dynamic airway collapse (EDAC) is a phenomenon in which excessive movement of the posterior membrane of the trachea results in >50% tracheal narrowing during expiration.<sup>2</sup> The diagnostic gold standard for EDAC is direct visualisation by bronchoscopy; however, the latter method is difficult to quantify. We employed dynamic 320-slice CT to simultaneously image the larynx and trachea and have detected EDAC by this technique in a symptomatic patient with COPD unresponsive to standard therapy.<sup>3</sup> In this patient, the application of 10 cm H<sub>2</sub>O of CPAP ameliorated symptoms and reduced EDAC as detected on CT. We therefore propose that increased PEEPi associated with laryngeal closure (and pursed lip breathing), may also result in 'pneumatic stenting' of EDAC with improved respiratory mechanics and symptoms and is a potential mechanism worthy of further investigation.

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- 3 Joosten S, MacDonald M, Lau KK, *et al*. Excessive dynamic airway collapse co-morbid with COPD diagnosed using 320-slice dynamic CT scanning technology. *Thorax* 2010;**67**:95–6.