only immunopositive for one marker. Notably NF200 exclusively detected some epithelial fibres and a group of larger diameter neurons (Ø3–6 μm) some of which are consistent with observations of Aδ-fibre airway mechanoreceptors.

Conclusions We have described neuronal structures in wholemount preparations of tissue from patients suffering from chronic cough. Notably, we described a population of PGP9.5 negative fibres within the airways. Some of these fibres are morphologically consistent with thinly myelinated Aδ-fibres described in animal models as 'cough receptors'. These ongoing studies could help define the plasticity of airway nerves in patients with chronic cough.

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Introduction Gastroesophageal reflux (GORD) is an important co-morbidity in patients with asthma.[1] It has a detrimental impact on symptoms with many patients being on oral corticosteroids despite maximal proton pump inhibitor (ppi) therapy.[1] Fundoplication in selected patients with severe asthma has been reported to improve asthma symptoms especially in children.[2]

Birmingham Heartlands Hospital (BHH) is part of Heart of England NHS trust, one of the largest foundation trusts in UK. The Severe and Brittle Asthma Unit which operates from BHH has a policy of referring selected patients for Fundoplication.

Method In this prospective study all patients undergoing laparoscopic fundoplication were followed up for 12 months. All patients had GORD symptoms refractory to ppi therapy and proven reflux on oesophageal manometry. Prior to surgery and at 3 months patients symptoms were assessed with a) Mini asthma quality of life questionnaire (mAQLQ) b) Reflux Cough Questionnaire (RCQ) and c) Cough symptom Score (CSS). Lung function and medication were documented at follow up visits. Wilcoxon signed rank test was used in statistical analyses.

Results Between December 2009 and June 2012 13 patients underwent fundoplication. Patient characteristics are shown below.

Fundoplication significantly improved CSS and RCQ at 3 months from baseline, p=0.002 and p=0.008 respectively. No significant change was seen in mAQLQ or lung function in asthmatic patients.

Conclusions Patients with severe cough and asthmatics with debilitating cough benefit from fundoplication. Asthmatics however have no significant improvement in quality of life scores or pulmonary function in the short term following fundoplication.

References

1. Sontag et al A Am J Gastroenterol. 2003 May; 98(5):987–99.
2. Rothenburg S et al J Pediatric Surg 2012 Jun; 47(6):1101–4.

Abstract P156 Table 1

*Age years	45.8	
M:F	2:11	
*DeMeester Score	59.7	
Diagnosis	Asthma 11	Cough 3
*Spirometry	**Pre**	**Post**
	FEV1 2.2	FEV1 2.15
	FVC 2.83	FVC 2.84
CSS	6.38	5.29
RCQ	50.2	41.6
mAQLQ	3.15	3.52

*mean values

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Background Little is known about the sensations and triggers that provoke cough in patients, or their preferred language to describe their experiences. We have previously collected a list of descriptors covering the themes of triggers, sensations and secretions, generated from individual interviews in a range of respiratory disorders, with a view to developing a questionnaire.

Aims To take the key descriptors and present these to focus groups diagnosed with chronic cough, COPD, ILD, asthma, and non-CF bronchiectasis.

Methods Five semi-structured focus groups were conducted with 22 participants (7 chronic cough, mean age 67.7 years (range 57–80) 4 female; 5 asthma, age 66 years (60–71) 2 female; 4 COPD, age 68 years (66–73) 2 female; 3 ILD, age 70 years (65–74) 0 female; 3 non-CF bronchiectasis, age 67.3 years (53–77) 2 female). Using simple manifest content analysis, a list of descriptors was derived based on the frequency of use during individual interviews. These were presented to the focus groups, asking them to describe what each word meant to them, the image it conjured up and whether they could identify a most appropriate word.

Results All focus groups favoured the terms 'phlegm' over 'sputum' (which was considered too "clinical"), 'irritation' over the word 'tickle' (which was considered too "gentle") and the 'need to cough' over an 'urge to cough'. In contrast, there were distinct differences in some disease groups for example, all groups, apart from COPD, recognised specific foods and eating as triggers of coughing. Similarly, all groups, apart from asthma, identified specific smells and odours as triggers of coughing. Patients with COPD, ILD and non-CF bronchiectasis related to the word 'crackle', but asthmatics only associated this word with "infection" and chronic cough patients did not identify with this terminology.

Conclusion These focus group discussions would suggest that whilst some descriptors of cough are felt to be universally appropriate, other descriptors and triggers appear to discriminate between diagnoses. This study will inform the language and content of a future questionnaire to categorise patients by the sensations and triggers provoking their cough.

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Introduction and Objectives Cough sound analysis is currently used for the assessment of cough frequency; it is not known if it could be used to assess cough intensity. We investigated the optimal Cough Sound Intensity (CSI) measure by validating it against peak cough flow rate (PCFR).

Methods 17 (11 female) patients with stable chronic cough and 15 (8 female) healthy subjects underwent simultaneous measurements of peak cough flow rate and cough sound during voluntary coughs using 2 types of microphones. Subjects were asked to cough voluntarily 10 times at 5 incremental thoracic pressures as measured by an oesophageal balloon catheter. Visual feedback was given to patients. A range of CSI parameters were determined from the