

dissemination to the hypervascularized wound – which would occur in disseminated stage disease – and the local shedding and implantation of malignant cells,<sup>4</sup> in which case the staging defined in the primary staging would not be affected, and long-term survival would remain a possibility.<sup>5</sup> In our specific case, the patient's extended survival supports the second of the above-mentioned etiopathological mechanisms.

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## Mixed COPD-asthma Phenotype: ACOS or CAOS? A Reflection on Recent Guidelines and Recommendations<sup>☆</sup>



### ¿Fenotipo mixto EPOC-ASMA, ACOS o CAOS? Una reflexión sobre las guías y recomendaciones recientes

To the Editor:

The combination of COPD and asthma in the same patient still raises controversy in international and national guidelines.<sup>1–5</sup> The phenomenon (mixed COPD-asthma phenotype in Spanish)<sup>1</sup> is called asthma-COPD overlap syndrome – ACOS – in English, but the range of diverging definitions (Table 1) suggests that “chaos” might better describe the current situation.

The Spanish COPD Guidelines (GesEPOC)<sup>1</sup> and other similar documents<sup>2,3</sup> recommend evaluating the presence of major and minor criteria, but these do not include clinical symptoms in asthma patients, such as rhinitis, polyposis or wheezing, or seasonal or diurnal variability. Moreover, these guidelines do not address response to corticosteroid treatment, while great importance is given to the bronchodilator test or certain allergic sensitization criteria. The assessment of Th2 inflammation is recommended, but this procedure cannot be performed in routine clinical practice, yet other more accessible variables, such as FeNO or peripheral eosinophilia, are omitted. Moreover, these guidelines, drawn up from the standpoint of COPD, ignore the existence of neutrophilic asthma, a major clinical problem in this setting.

In the GOLD-GINA<sup>4</sup> initiative, ACOS is determined on the basis of a numerical score calculated from clinical, functional and radiological criteria characterizing COPD and asthma. This approach makes greater clinical sense, but it seems to lack specificity, and overlooks essential elements, such as smoking history.

Finally, the Spanish Guideline for the Management of Asthma (GEMA)<sup>5</sup> recommends that a stepwise approach be taken in patients whose clinical course is indicative of overlapping asthma and COPD. These steps include the attempt to treat with oral corticosteroids, a post-bronchodilator test (the benefit of which in COPD is currently under debate), or a methacholine bronchial challenge test (contraindicated in many of these cases).

We should emphasize that the only thing clear about ACOS is that patients with this syndrome benefit significantly from the inclusion of inhaled corticosteroids in their treatment regimens. As things stand, different treatments could be prescribed for the same patient, depending on the recommendations followed. In our opinion, scientific societies and working groups should work together to produce common criteria that will help clinicians to reach the right decisions.

**Table 1**

Characteristics and Parameters Guiding the Characterization of the Asthma-COPD Overlap Syndrome (COPD-Asthma Mixed Phenotype) According to Different Guidelines and Initiatives.

	GesEPOC	CPPS	FMSD	GOLD/GINA	GEMA
Family history of asthma and/or atopy	No	No	No	Yes	Yes
Personal history of asthma	Yes	Yes	Yes	Yes	Yes
Personal history of atopy	Yes	Yes	Yes	No	No
Marked or seasonal variability of symptoms	No	No	No	Yes	Yes
Rhinitis/sinusitis	No	No	No	No	Yes
Highly positive bronchodilator test (↑ FEV1 ≥ 15% and ≥ 400 ml)	Yes	Yes	Yes	Yes	No
Positive bronchodilator test (↑ FEV1 ≥ 12% and ≥ 200 ml)	Yes	Yes	Yes	Yes	Yes
Significant variability in FEM	No	No	Yes	Yes	No
Positive bronchial challenge	No	Yes	No	No	Yes
Positive oral corticosteroid test	No	No	No	No	Yes
Improvement with inhaled corticosteroids	No	No	No	Yes	No
Raised total IgE	Yes	Yes	Yes	Yes <sup>a</sup>	No
Eosinophilia in sputum	Yes	Yes	Yes	No <sup>a</sup>	Yes
Peripheral eosinophilia	No	No	No	Yes <sup>a</sup>	Yes
Raised FeNO	No	Yes	Yes	Yes <sup>a</sup>	Yes
Positive skin prick tests	No	No	No	Yes <sup>a</sup>	No

CPPS, Czech Pneumological and Phthisiological Society; FMS, Finnish Medical Society Duodecim; GEMA4.0, Spanish Guideline for Asthma Management 4.0; GesEPOC, Spanish COPD Guidelines; GOLD/GINA, Global Initiative for Chronic Obstructive Lung Disease/Global Initiative for Asthma.

<sup>a</sup> Variables which might assist in differentiating between asthma and COPD in the specialist setting, irrespective of their value in the diagnosis of overlap syndrome.

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GesEPOC and GEMA4.0<sup>1,5</sup> were both spearheaded by the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR), yet surprisingly the recommendations for characterizing what appears to be the same syndrome or phenotype vary widely. Even more surprising is that none of recommended approaches has been validated. The authors of these guidelines, in their zeal to provide a solution to a significant clinical problem, must not forget that the guidelines, far from being an end in themselves, are an instrument, a working tool, in which recommendations must be preceded by research. For this reason, we call for the formation of a working team to define the specific questions that need answers and to carry out the studies needed to produce the best evidence-based consensus document possible.

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## Pneumothorax Following Bronchoalveolar Lavage for the Diagnosis of Non-tuberculous Mycobacterial Infection – An “Atypical” Complication of Bronchoscopy?<sup>☆</sup>



### Neumotórax tras lavado broncoalveolar realizado para diagnóstico de infección por micobacterias no tuberculosas. ¿Una complicación «atípica» de la broncoscopia?

To the Editor,

We report the case of an 80 year-old woman who had had dry cough and wheeze for many years, presenting with increased symptoms associated with recent development of generalized weakness and weight loss. She had had several episodes of pneumonia. Previous bronchoscopy and bronchoalveolar lavage (BAL) 13 years ago was negative for acid-fast bacilli (AFB) but identified Curschmann’s spirals. Recent chest CT showed progression of consolidation in the right upper, middle and lower lobes with bilateral bronchiectasis and centrilobular micronodules in a tree-in-bud configuration. Bronchoscopy was performed for further evaluation.

Shortly after the procedure, she reported acute right-sided back pain, which responded to acetaminophen. Examination was unchanged, and chest radiography performed 3 h later did not show pneumothorax. As her pain had resolved, she was discharged home. During subsequent days, she reported fever (101–105 °F) and intermittent back and right upper quadrant pain with no dyspnea or change in cough. She was evaluated in the clinic on the fifth day after the procedure. Chest CT showed an extensive right lower and middle lobe consolidation with hydropneumothorax (Fig. 1, upper panel).

By this time, BAL smear and cultures were positive for AFB. Thoracentesis was performed, confirming an exudative pleural effusion that was lymphocyte-predominant (82% lymphocytes), and cultured no organisms. She commenced recommended treatment for non-tuberculous mycobacterium (NTM),<sup>1</sup> and also treatment for presumed health-care associated pneumonia. The hydro-pneumothorax was managed without need for insertion of a pleural catheter or surgical intervention.

A diagnosis of *M. avium complex* was later confirmed from BAL fluid. She tolerated the NTM regimen well, reporting decreased symptoms of fever and back pain. Subsequent chest CT imaging following 3 months of treatment for NTM showed resolution of the pleural effusion and pneumothorax, and improvement in tree-in-bud appearances (Fig. 1, lower panel).

NTM disease may be associated with spontaneous pneumothorax with an incidence of 2.4%–4.1%.<sup>2</sup> Mortality due to pneumothorax in such patients may be as high as 66%, compared to 8% in those without pneumothorax.<sup>2</sup> Conversely, the overall risk of pneumothorax during BAL fluid collection is extremely low.<sup>3</sup> In a study of 1127 BAL procedures, no patient developed pneumothorax,<sup>4</sup> while in patients with Acute Respiratory Distress Syndrome, the reported incidence related to BAL is 0.9%.<sup>5</sup> To our knowledge, there are no previous reports of pneumothorax due to BAL performed for the diagnosis of NTM disease.

While our patient developed back pain shortly after the procedure, chest radiography did not show pneumothorax at 3 h post-procedure. It is possible that the pneumothorax may have been too small to be initially recognized by portable chest radiography. Furthermore, a protracted history of fevers and persistent pain in the days following the procedure may have reflected aggravation of pleural inflammation, thus conceivably increasing the risk of pneumothorax during this later period.

Bronchoscopy is a commonly-used procedure in diagnosing NTM.<sup>1</sup> Our case highlights an important complication in patients with NTM who undergo bronchoscopy for diagnostic confirmation. Despite the occurrence of pneumothorax, a definitive diagnosis was obtained, allowing initiation of treatment for an otherwise rapidly-progressive pulmonary infection.

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