arteries). Bronchial arteries supply oxygenated blood to the tracheobronchial tree up to the terminal bronchioles, to the visceral pleura and irrigates some mediastinal structures including hiliar lymph nodes or esophagus.

Bronchial artery malformations can present as aneurysms or pseudoaneurysms, which are difficult to distinguish clinically and bronchoscopically. Although most patients are asymptomatic, the condition may result in massive hemoptysis.

Dilated bronchial arteries have >2 mm in diameter and a frequent tortuous mediastinal course. Pulmonary artery obstruction or parenchymal lung diseases cause chronic pulmonary ischemia leading to hypertrophy or enlargement of bronchial circulation in an effort to maintain blood flow to the affected lung and gas exchange through systemic-pulmonary arterial anastomoses. Among the conditions associated with bronchial enlargement we find congenital disorders (Tetralogy of Fallot or ALCAPA syndrome) or acquired diseases, including infections, chronic thromboembolic disease, Takayasu arteritis, fibrosing mediastinitis, trauma, lung cancer or bronchiectasis.

Congenital anomalies in the pulmonary venous system and cardiac malformations with prolonged pulmonary venous hypertension lead to bronchial vessel dilatation and variceal formation. These conditions present in childhood with recurrent pneumonia and hemoptysis. Mucosal hyperemia, tortuous airway vasculature and varices are typical findings in the bronchoscopy.[3]

Chronic airways diseases such as bronchiectasis, asthma, chronic obstructive pulmonary disease or sarcoidosis produce changes in the pulmonary vasculature. Bronchiectasis is the most common cause of hemoptysis since bronchial artery enlarge, with even aneurysm or pseudoaneurysm formation.[4] CT detection of these vascular lesions is important to avoid procedures in the affected areas during bronchoscopy. Vascular changes in asthma have been described in the bronchial microcirculation and include angiogenesis, dilation and hyperpermeability.[5] Collagen vascular disorders like Marfan syndrome or Bechet's disease can also produce bronchial aneurysms.

Although vascular patterns observed during bronchoscopy in the different mentioned disorders may not be specific, its recognition help to determine the underlying pathophysiology and to choose the appropriate management.

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Borja Recalde-Zamacona [a,*] Ana Ezponda [b] Francesco Porcarelli [c] Juan Bertó [a] Lina Zuccatosta [c] Stefano Gasparini [c]

[a] *Pulmonary Medicine Department, Clinica Universidad de Navarra, Pamplona, Spain*
[b] *Radiology Department, Clinica Universidad de Navarra, Pamplona, Spain*
[c] *Respiratory Diseases Unit, Department of Internal Medicine, Azienda Ospedaliero-Universitaria, Ospedali Riuniti, Ancona, Italy*

* Corresponding author.
E-mail address: brecalde@unav.es (B. Recalde-Zamacona).

https://doi.org/10.1016/j.arbres.2021.03.016

Need for Epidemiological Studies on Chronic Obstructive Pulmonary Disease in Rural Spain

Necesidad de estudios epidemiológicos en enfermedad pulmonar obstructiva crónica en la España rural

Dear Editor,

We have read with great interest the article on the prevalence and determinants of COPD in Spain (EPISCAN II), which offers the best information on the epidemiology of the disease in our country.[1] Two of the study's results stand out: the spirometrically-defined prevalence of COPD in Spain is 11.8%, and the underdiagnosis of the disease is 74.7%. The authors acknowledge that one of the limitations of the study is that it was conducted essentially in an urban setting. There is a significant lack of knowledge on the epidemiology of chronic respiratory diseases in general, and COPD in particular, in rural areas of our country. Studies carried out in the USA have found rural-urban disparities in the prevalence of COPD, which is higher in rural areas.[2] The reason is likely to be multifactorial: tobacco use is higher and access to smoking cessation programs is limited in rural populations. Lower socioeconomic status could also be a risk factor for COPD in this population. Finally, environmental biomass smoke exposure is higher in this setting.[2] This is a recognized risk factor for COPD, even in developed countries.[3] Therefore, the global prevalence of COPD found in EPISCAN II might underestimate the disease burden in rural population.

Furthermore, it is plausible that underdiagnosis rates are higher in rural than in urban areas. Clinical guidelines strongly emphasize the association between tobacco smoke and COPD, and the diagnosis may be delayed in non-tobacco-related COPD. Future analyses of EPISCAN II will likely explore whether there is a relationship between smoking history and underdiagnosis of the disease. Access to spirometry may also be limited for rural residents, and this is another credible source of underdiagnosis in this setting. The On-Sint study, carried out in our country, revealed that being followed-up in a rural setting was associated with an inadequate diagnosis of COPD.[4]

Acquiring accurate information on the epidemiology of COPD in rural Spain becomes highly desirable in view of the results of a recently published study: while mortality attributable to chronic lower respiratory disease in urban areas of the USA is declining, it is increasing in rural areas, widening the rural-urban gap in mortality.[5] This is in contrast to cardiovascular disease-related mortality, which is decreasing both in rural and urban areas.[5] It is currently speculative if a similar trend could be found in mortality from COPD in Spain.

It is obvious that confirming possible differences in the prevalence, impact or underdiagnosis of COPD in rural areas would have policy implications, aimed at increasing support to improve prevention, diagnosis and treatment of the disease in this set-

ting. Therefore, epidemiological studies focused specifically on this population are urgently needed, and should be promoted by the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR).

Sources of funding

None.

Conflicts of interest

None.

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Rafael Golpe[a,b,*] David Dacal-Rivas[a] Nagore Blanco-Cid[a] Olalla Castro-Añón[a]

[a] *Servicio de Neumología, Hospital Universitario Lucus Augusti, Lugo, Spain*
[b] *Grupo C039 Biodiscovery HULA-USC, Instituto de Investigación Sanitaria de Santiago de Compostela (IDIS), Santiago de Compostela, Spain*

* Corresponding author.
E-mail addresses: rafael.golpe.gomez@sergas.es, rafagolpe@gmail.com (R. Golpe).

https://doi.org/10.1016/j.arbres.2021.02.013