



Editorial

Transbronchial Cryobiopsy in Interstitial Lung Disease: Advantageous Costs to Benefits Ratio[☆]



La criobiopsia transbronquial en la enfermedad pulmonar intersticial: excelente relación coste/beneficio

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Interstitial lung disease (ILD) comprises a group of pathologies characterized histologically by different degrees of pulmonary parenchymal inflammation and fibrosis. So far, around 150 causes of ILD have been identified. Idiopathic pulmonary fibrosis (IPF), the prototype of ILD, is diagnosed in one-third of all cases. Despite advances in diagnosis and therapy, ILD prognosis continues to be as poor as that of lung cancer.¹

International diagnostic guidelines for ILD accept that in around half of all cases the disease can be diagnosed using high-resolution chest computed tomography (HRCT) in a suitable clinical setting, without the need for open lung biopsy (OLB), with the proviso that multidisciplinary committees determine definitive diagnosis.^{2–4} Situations in which more information can be gained from lung biopsy than from HRCT are defined in the latest version of the guidelines, although OLB is still the only biopsy considered suitable for identifying the histological patterns by which clinicians can determine the possible causes of the disease.² Nevertheless, 2 large studies found that OLB was performed as a diagnostic procedure in 22% and 54% of IPF patients, respectively.^{3,4} Complications associated with acquiring tissue samples for biopsy in patients with compromised lung function, problems with the tissue sample, the slight but ever present risk of mortality,⁷ and high surgery and hospitalization costs have considerably undermined this practice.

Some clinicians believe that the technical and clinical complications presented by each patient, along with the lack of an effective treatment for IPF, have made histological diagnosis from lung biopsy redundant in this disease. Despite this, histological diagnosis continues to be an important factor in the multidisciplinary assessment of a considerable number of cases. In ILD, a definitive diagnosis is essential for clinicians to determine the causative agent, provide the best possible treatment, and determine prognosis, which can vary according to etiology. Interestingly, the findings of a recent study⁵ confirmed the effectiveness of pirfenidone in

stabilizing IPF, suggesting that early HRCT diagnosis of atypical IPF and administration of pirfenidone or some other new therapy may achieve greater disease stabilization.

Transbronchial biopsy is discouraged in ILD, mainly because the possibility of artefacts and the small size of the sample obtained using this procedure prevent a detailed study of tissue architecture. The first diagnostic guidelines for ILD were based on fibrosis and inflammation patterns seen on OLBs, which enabled pathologists to define the extent of the disease. However, microscopic study is at best complex and at worst impossible in the case of tiny specimens that have been crushed by conventional forceps. These problems, however, can be avoided if ILD diagnostic protocols include the use of cryobiopsy. Transbronchial cryobiopsy has been used successfully for the removal of endobronchial tumors for 27 years,⁶ and the use of cryobiopsy in ILD has been the focus of many recent studies.

In *Archivos de Bronconeumología*, Hernández-González et al.⁷ described their experience with this technique, and also estimated the economic cost of using cryobiopsy techniques in ILD. Although theirs was not the largest cohort (33 patients), they reported a diagnostic yield similar to that obtained in other studies (79%). Incidence and type of complications associated with the procedure, such as pneumothorax and bleeding, vary between studies. Fruchter et al.⁸ in the largest cohort (75 patients), reported 4% mild to moderate bleeding and 2.6% pneumothorax. These figures are far below those described by Pajares et al. (56.4% and 7.7%)⁹ and Hernández-González et al. (30% and 12%),⁷ although the authors stress that both pneumothorax and bleeding improve with routine clinical strategies. Only 1 study reports worsening of the patient's condition following cryobiopsy.¹⁰ An observation common to all studies is the larger size of the specimen obtained compared to transbronchial biopsy (4–43.11 mm²)^{7,10} and the absence of crush artefacts. The series studied by Hernández-González, however, is the first to give a detailed analysis of the cost of cryobiopsy in ILD.⁷ This aspect is particularly important in situations in which cost-effectiveness is prioritized over other considerations. The authors conclude that cryobiopsy is €953.09 more economical per patient than OLB when performed on an outpatient basis, and €1925.29 more economical in the case of a 48-h hospital stay.

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Although further research is needed to compare the cost-effectiveness of OPB and cryobiopsy, all studies published so far highlight the indisputable advantage of cryobiopsy and the almost total absence of complications. On this basis, the technique should be included in ILD diagnostic protocols.⁷

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