



## Editorial

## Is Bilateral Thoracentesis Necessary in Bilateral Pleural Effusion? ☆



## Derrame pleural bilateral: ¿es necesaria la toracentesis bilateral?

Ivan Vollmer,\* Mariana Benegas, Marcelo Sánchez

Servicio de Radiodiagnóstico, Centro de Diagnóstico por la Imagen Clínic, Hospital Clínic, Barcelona, Spain

Pleural effusion affects 1.5 million U.S. inhabitants every year, with an incidence of 3000 cases per million inhabitants/year.<sup>1</sup> Over 50 causes of pleural effusion have been described, some of which are directly due to disease of the mesothelium itself, and others caused by underlying systemic and neoplastic diseases, organ dysfunction (heart, liver, etc.) or drug toxicity.<sup>2</sup> Pleural effusion can be uni- or bilateral, each with its corresponding differential diagnoses.

To correctly analyze the characteristics of the effusion and to make an etiological diagnosis, a thoracentesis must be performed. Many studies and clinical guidelines advocate the use of ultrasound to guide the procedure, leading to fewer complications and a more precise diagnosis.<sup>3</sup>

To date, no published clinical guidelines have addressed the diagnostic management of bilateral pleural effusion. Most of the existing clinical guidelines focus on the management of unilateral pleural effusion in adults,<sup>2,3</sup> unilateral parapneumonic effusion,<sup>3,4</sup> and malignant effusion,<sup>3,5</sup> so studies are needed to evaluate the need for performing unilateral or bilateral thoracentesis in this clinical setting. Kalomenidis et al.<sup>6</sup> performed double thoracentesis in patients with bilateral pleural effusion, and found that there was no need to puncture both sides of the chest. Nevertheless, a high percentage of the study cases (92%) were patients in whom bilateral pleural effusion was due to heart disease, and this is known to be a cause of effusion of this kind. Puchalski et al.<sup>7</sup> published a prospective study, in which they also performed bilateral thoracentesis in 100 patients; they found that bilateral pleural effusion may be due to multiple factors. However, this study showed that, in the absence of unilateral pneumonia, unilateral subdiaphragmatic surgical procedures or other reasons that would explain different findings in each hemithorax, both pleural effusions had similar features in terms of fluid and etiology. The British Thoracic Society (BTS) clinical guidelines do not recommend bilateral thoracentesis in patients in whom there is a high clinical suspicion that both effusions are transudate-type pleural effusion caused by the same underlying disease; this procedure should be reserved for cases in which the pleural effusion is atypical or does not respond to specific treatment.

In this edition of ARCHIVOS DE BRONCONEUMOLOGÍA, Ferreiro et al.<sup>8</sup> describe the results of a prospective study performed in 36 patients with bilateral pleural effusion. This study examined the results of the analysis of pleural fluid obtained from each hemithorax, together with other findings, such as clinical history, radiological studies, clinical laboratory tests, and pleural biopsy. Most bilateral pleural effusions (94.6%) had the same etiology. In this study, only 2 patients had different etiologies in each side. In line with the findings of Puchalski et al.<sup>7</sup> and Kalomenidis et al.,<sup>6</sup> the authors conclude that on the basis of the results obtained, it is unnecessary to perform thoracentesis in both hemithoraces of patients with bilateral pleural effusion. As only 2 cases with different etiologies were included in this study,<sup>8</sup> the authors were unable to conduct a statistical study of which clinical or radiological findings might suggest the need to perform a bilateral thoracentesis.

In their study, Ferreiro et al.<sup>8</sup> do not discuss the risks of performing a double thoracentesis. However, Puchalski et al.<sup>7</sup> showed that when bilateral thoracentesis is considered necessary, the complication rate is comparable to that of the unilateral procedure. Although both procedures were performed simultaneously in this report, by 2 doctors, bilateral thoracentesis can be conducted sequentially.

It seems likely that the use of thoracic ultrasonography for guiding the thoracentesis, as recommended in the guidelines, can help select patients in whom bilateral pleural effusion probably involves different etiologies. Yang et al.<sup>9</sup> showed that exudate can be correctly diagnosed with the use of ultrasonography, but if it is anechoic, it could be either an exudate or a transudate. Ultrasonography is more sensitive than computed tomography (CT) for detecting complications within the effusion, and evidence also shows that CT cannot discriminate between exudate and transudate.<sup>10</sup>

In the absence of specific recommendations in current clinical guidelines on the management of pleural effusion, studies with larger numbers of patients are needed to evaluate when bilateral involvement calls for the performance of a double thoracentesis.

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\* Corresponding author.

E-mail address: [vollmer@clinic.ub.es](mailto:vollmer@clinic.ub.es) (I. Vollmer).

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