

- and preschool children with wheezing disorders. *Pediatr Pulmonol.* 2012;47:884–94.
9. Kraan J, van der Mark TW, Koëter GH. Changes in maximum expiratory flow–volume curve configuration after treatment with inhaled corticosteroids. *Thorax.* 1989;44:1015–21.
 10. Weiner DJ, Forno E, Sullivan L, Weiner GA, Kurland G. Subjective and objective assessments of flow–volume curve configuration in children and young adults. *Ann Am Thorac Soc.* 2016;13:1089–95.
 11. Lee J, Lee C-T, Lee JH, Cho Y-J, Park JS, Oh YM, et al., KOLD Study Group. Graphic analysis of flow–volume curves: a pilot study. *BMC Pulm Med.* 2016;16:18, <http://dx.doi.org/10.1186/s12890-016-0182-8>.
 12. Li H, Liu C, Zhang Y, Xiao W. The Concave shape of the forced expiratory flow–volume curve in 3 seconds is a practical surrogate of FEV1/FVC for the diagnosis of airway limitation in inadequate spirometry. *Respir Care.* 2016;62:363–9.
 13. Zheng C-J, Adams AB, McGrail MP, Marini JJ, Greaves IA. A proposed curvilinearity index for quantifying airflow obstruction. *Respir Care.* 2006;51:40–5.
 14. Wildhaber JH, Sznitman J, Harpes P, Straub D, Möller A, Bask P, et al. Correlation of spirometry and symptom scores in childhood asthma and the usefulness of curvature assessment in expiratory flow–volume curves. *Respir Care.* 2007;52:1744–52.
 15. Johns DP, Das A, Toelle BG, Abramson MJ, Marks GB, Wood-Baker R, et al. Improved spirometric detection of small airway narrowing: concavity in the expiratory flow–volume curve in people aged over 40 years. *Int J Chron Obstruct Pulmon Dis.* 2017;12:3567–77.

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1579-2129/

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Current Management of Pleural Effusion: Results of a National Survey[☆]



Resultados de una encuesta nacional sobre la situación actual del manejo del derrame pleural

To the Editor,

Between 4% and 10% of respiratory problems in pulmonology departments involve pleural effusion (PE), and more than 3000 individuals per million inhabitants are affected.¹ In the last decade, there has been a significant advance in diagnostic and therapeutic techniques in this disease that have led to modifications in management algorithms.^{2–5} However, the management of PE in our setting has not been fully characterized. Surveys or clinical audits are evaluation strategies aimed at improving the quality of the processes and outcomes of a clinical service. In other countries, such as the United Kingdom, some scientific societies have conducted audits focused on collecting data in clinical practice, which has allowed them to define and assess areas for improvement.^{6–8}

An understanding of the organization and specific aspects of care in this disease could help us develop recommendations to try to achieve quality care. For this reason, and with the aim of assessing the current state of affairs, we conducted this study. The main objective was to describe clinical care and to collect data on patient management, safety aspects, ethical and legal considerations, and on teaching and research activity in PE.

Between July and October 2016, we carried out a multicenter cross-sectional study in Spain, with a survey that was sent to pulmonology department heads, managers, and physicians specializing in pleural diseases in public sector hospitals of different levels of complexity. Hospital complexity was classified according to criteria used in other studies performed in Spain.⁹ Study sites were selected randomly, and 129 hospitals were included. The respondents were contacted by email, and invited to complete the survey on an online platform. This survey included 22 items on different organizational, care, teaching and research aspects.

The survey was completed by 48 (37%) professionals, 24 (50%) heads of department, 11 (23%) heads of unit, and 13 specialists in PE; 23 (48%) hospitals were centers of medium complexity (between 200 and 500 beds and more than 50 interns) and 25 (52%) were high complexity (ample technological resources, more than 500 beds and between 160 and 300 interns). The survey was not completed by any low complexity center. **Table 1** shows the results of the analysis of the different items by complexity of the center.

Significant differences can be observed among Spanish hospitals in terms of organization of the care of pleural disease, associated mainly with the complexity of the centers. According to data from the White Paper on Respiratory Medicine,¹⁰ which surveyed nearly 500 pneumologists in 2014, there were only specific pleura clinics in 12% of the centers with less than 750 beds and in 20% of those with more than 750 beds. Although in our survey, 52% and 72% of the hospitals of medium and high complexity, respectively, claimed to have a pleura unit, this was integrated into the bronchoscopy unit in 83% and 66% of the sites, respectively. Only 13% of hospitals of medium complexity and 36% of high complexity had dedicated pleura clinics: these results are similar to those published in the White Paper.¹⁰ In 96% of the centers, PE is studied on an outpatient basis, with no differences between centers. In a previous study, we found that ambulatory care can be delivered with a high level of efficiency and equal level of safety.¹¹

The number of centers that perform advanced procedures such as thoracoscopy or tunneled drainage is limited, especially in hospitals of medium complexity. However, the percentage of hospitals that include conventional chest tubes or talc slurry pleurodesis in their portfolio of services is higher, and both procedures are therapeutic alternatives in infectious or malignant PE.^{4,5} The White Paper found that 35% of pulmonologists do not perform ultrasound, tube placement, pleurodesis, or fibrinolysis.¹⁰ The results for some of these procedures were different in this survey, but this may be because some were inappropriately recorded. It would appear necessary that all pleural techniques be centralized, thus justifying the creation and development of specific units to which value may be added by incorporating more advanced procedures.

In 2015, the British Thoracic Society published the details of their second audit.⁸ They found a greater use of informed consent and an increase in the use of ultrasound guidance for chest tube insertion, from 52% to 69%. Ultrasound was available in 82%

[☆] Please cite this article as: Botana-Rial M, Núñez-Delgado M, Leiro-Fernández V, Fernández-Villar A. Resultados de una encuesta nacional sobre la situación actual del manejo del derrame pleural. *Arch Bronconeumol.* 2019;55:274–276.

Table 1
Overall Survey Results and Differences in Organizational Aspects, Care, Teaching and Research Depending on the Complexity of the Center.

	Items	Hospitals (n=48)	High Complexity Centers ^a (n=25)	Intermediate Complexity Centers ^a (n=23)	P ^a
Organization and infrastructures	Dedicated PE clinic	12/48 (25%)	9/25 (36%)	3/23 (13%)	.06
	Specific Pleura Unit	30/48 (62.5%)	18/25 (72%)	12/23 (52.2%)	.1
	Unit is part of the Bronchoscopy Unit	22/30 (73.3%)	12/18 (66.6%)	10/12 (83.3%)	.3
	Specific room for pleural techniques	43/48 (89.5%)	23/25 (92%)	20/23 (87%)	.4
	Rooms shared with Bronchoscopy Unit	22/43 (51.1%)	12/23 (51.1%)	10/20 (50%)	.9
	PE studies performed on an outpatient basis	46/48 (95.8%)	25/25 (100%)	21/23 (91.3%)	.2
	Have their own ultrasound machine	36/38 (94.7%)	17/17 (100%)	19/21 (90.5%)	.2
	Portfolio of services	Closed pleural biopsies are performed for study of PE	43/47 (91.4%)	25/25 (100%)	18/22 (81.8%)
Biopsies performed of masses or pleural thickening		36/47 (76.5%)	19/25 (86.3%)	17/22 (77.2%)	.8
Thoracoscopy performed		14/38 (36.8%)	10/17 (58.1%)	4/21 (19%)	.001
Conventional chest tubes placed		31/35 (88.5%)	18/20 (90%)	13/15 (86.7%)	.5
Tunneled chest tubes placed		19/30 (63.3%)	8/11 (72.7%)	11/19 (57.8%)	.3
Talc poudrage pleurodesis performed		12/30 (40%)	9/14 (64.3%)	3/16 (18.8%)	.01
Talc slurry pleurodesis performed		26/34 (76.4%)	11/14 (78.6%)	15/20 (75%)	.5
Safety, ethical aspects, and sedation		Ultrasound-guided procedures	19/36 (52.7%)	9/16 (53.3%)	10/20 (50%)
	Use of informed consent for procedures	32/36 (88.8%)	14/15 (93.3%)	18/21 (85.7%)	.4
	Routine use of sedation:				
	• In medical thoracoscopy	14/10 (71.4%)	8/10 (80%)	2/4 (50%)	.6
	• In tunneled catheter placement	7/19 (36.8%)	4/8 (50%)	3/11 (27.3%)	.3
	• In other chest tubes	7/31 (22.5%)	2/18 (11.1%)	5/13 (38.4%)	.05
Teaching, training and research	Accredited courses in pleural pathology	10/33 (30.3%)	6/14 (42.9%)	4/19 (21.1%)	.1
	Undergraduate teaching	40/46 (86.9%)	19/22 (86.4%)	21/24 (87.5%)	.6
	Postgraduate teaching	33/42 (78.5%)	23/23 (100%)	10/19 (52.6%)	.001
	Researchers working on their own pleural pathology projects	13/25 (52%)	8/13 (61.5%)	5/12 (41.7%)	.2
	Participation in multicenter projects	13/33 (39.5%)	8/14 (57.1%)	5/19 (26.3%)	.07

PE: pleural effusion.

^a P: differences between the centers of high and intermediate complexity.

of the hospitals.⁸ In our survey, although 94% of the centers had an ultrasound machine, only 52% used it.

A quality criterion in pleural pathology is obtaining informed consent, which was done in nearly 90% of cases. The use of sedation and anesthesia has been shown to decrease the risk of complications and patient anxiety or pain.¹² In our study, its indication was limited, especially in pleural drainage.

Specialized pleural disease units are the perfect setting for training specialists and for developing quality translational and clinical research.^{13,14} The postgraduate training program in pulmonology states that interns must acquire a high level of competence in thoracentesis, although a recent study shows that this group of professionals had certain shortcomings in knowledge and practice, the use of anesthesia, performing the procedure without ultrasound, and processing samples.¹⁵ This survey underlines the need to improve training in the diagnostic and therapeutic management of PE, particularly in the performance of thoracentesis.¹⁵ Another of the areas studied was training and teaching. Only 30% of the respondent hospitals ran accredited courses, with slightly higher rates in high complexity centers. Teaching activities correlated with

the complexity of the hospital, especially postgraduate teaching. Research leads to improved quality of care and, in addition to care, teaching and management, is a corporate objective. The number of research projects, whether conducted exclusively in the center or in a multicenter setting, was low.

Although pleural units have been shown to deliver effective management of the patient with pleural disease, standardization in clinical practice between the centers is difficult. We must offer better training programs and the management of patients with PE must be protocolized and adapted to the standards recommended by the scientific societies and clinical practice guidelines.^{4,5,12} Quality plans and improvement strategies supported by scientific societies must be encouraged.

A limitation of this study was the low percentage of professionals who completed the survey, as in other similar studies. Although a larger study might allow us to make a better comparison between the care of these patients in centers of the same complexity and establish recommendations for better management of these processes, we believe that this paper provides valuable information for all professionals interested in pleural pathology.

Conflict of Interests

The authors declare that they have no conflict of interests directly or indirectly related with the contents of this manuscript.

Acknowledgements

Dr. Victor del Campo Pérez, Preventive Medicine, Hospital Álvaro Cunqueiro, SEPAR Integrated Research Program in Interventional Pulmonology

References

1. Porcel JM, Esquerda A, Vives M, Bielsa S. Etiología del derrame pleural: análisis de más de 3.000 toracocentesis consecutivas. Arch Bronconeumol. 2014;50:161–5.
2. Gasparini S, Bonifazi M. Pleural diseases. Curr Opin Pulm Med. 2017;23:269–74.
3. Akulian J, Feller-Kopman D. The past, current and future of diagnosis and management of pleural effusion. J Thorac Dis. 2015;7 Suppl. 4:S329–38.
4. Villena Garrido V, Cases Viedma E, Fernández-Villar A, de Pablo Gafas A, Pérez Rodríguez E, Porcel Pérez JM, et al. Normativa sobre el diagnóstico y tratamiento del derrame pleural. Actualización. Arch Bronconeumol. 2014;50:235–49.
5. Ferreiro L, Toubes ME, Valdés L. Utilidad de la ultrasonografía en la enfermedad pleural. Arch Bronconeumol. 2017;53:659–66.
6. Walshe ADP, Douglas JG, Kerr KM, McKean ME, Godden DJ. An audit of the clinical investigation of pleural effusion. Thorax. 1992;47:734–7.
7. Hooper C, Maskell N. British Thoracic Society national pleural procedures audit 2010. Thorax. 2011;66:636–7.
8. Hooper CE, Welham SA, Maskell NA. Pleural procedures and patient safety: a national BTB audit of practice. Thorax. 2015;70:189–91.
9. Pozo Rodríguez F, Castro Acosta A, Melero Moreno C, Capalastegui A, Esteban C, Hernández Carcereny C, et al. Auditoría clínica de los pacientes hospitalizados

- por exacerbación de EPOC en España (estudio AUDIPOC): método y organización del trabajo. Arch Bronconeumol. 2010;46:349–57.
10. De Lucas Ramos P, Rodríguez-Moro JM. Libro Blanco. La Neumología en España. Respira. Fundación Española del Pulmón. SEPAR; 2015.
 11. Botana Rial M, Leiro Fernández V, Represas Represas C, Pallarés Sanmartín A, del Campo Pérez V, Fernández-Villar A. Estudio de coste-efectividad del manejo diagnóstico del derrame pleural en una unidad de patología pleural ambulatoria. Arch Bronconeumol. 2012;46:473–8.
 12. Havelock T, Teoh R, Laws D, Gleeson F. BTS pleural disease guideline group. Pleural procedures and thoracic ultrasound: British Thoracic Society Pleural Disease Guideline 2010. Thorax. 2010;65 Suppl. 2:ii61–76.
 13. Hooper CE, Lee YC, Maskell NA. Setting up a specialist pleural disease service. Respirology. 2010;15:1028–36.
 14. Botana-Rial M, Fernández-Villar AI. La importancia de las unidades especializadas en patología pleural para la formación posgraduada. Rev Clin Esp. 2016;216:474–80.
 15. Porcel JM, Cases-Viedma E, Bielsa S. Una encuesta a médicos residentes sobre la realización de toracocentesis diagnósticas y terapéuticas: ¿una laguna en la formación? Rev Clin Esp. 2016;216:474–80.

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1579-2129/

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Immunoglobulin G4-Related Lung Disease as an Incidental Finding After Surgical Resection of Lung Cancer[☆]



Enfermedad pulmonar relacionada con inmunoglobulina G4 como hallazgo incidental tras resección quirúrgica de carcinoma pulmonar

To the Editor,

Immunoglobulin G4-related disease (IgG4-RD) is a recently recognized systemic autoimmune process that brings together a series of diseases that share certain pathological, serological, and clinical characteristics.¹ Although it most often affects the pancreas, salivary glands and lymph nodes, almost any structure of the body can be involved. Isolated pulmonary involvement is rare,² yet the greatest range of clinical and radiological presentations occurs in the lung. IgG4-related lung disease can manifest in the form of bronchovascular thickening, pleural thickening, interstitial involvement, solitary pulmonary nodule, or ground glass opacities that sometimes mimic lung cancer, so differential diagnosis is required.¹ However, the coexistence of pulmonary

IgG4-RD and lung cancer in the same lesion has only rarely been described.^{3–5}

We report the case of a patient diagnosed with lung cancer and mediastinal lymph node involvement who was treated with surgical resection; the pathology study of the lesion also revealed pulmonary IgG4-RD.

This was 70-year-old woman, former smoker of 50 pack-years, with a clinical history of discoid lupus and atrial fibrillation, who was referred to our department due to an incidental finding of a lung mass on chest X-ray. The patient did not report any respiratory symptoms. Computed tomography (CT) showed a mass with spiculated borders, measuring 6 cm, contiguous with the parietal pleura, in addition to hilar and mediastinal lymphadenopathies measuring 10 mm (Fig. 1A). Positron emission tomography showed an increased accumulation of fluorodeoxyglucose-F18 in the mass with a SUVmax of 9.2 (Fig. 1B), in addition to hypermetabolic lymphadenopathies in the right upper (SUVmax 4) and lower (SUVmax 6.7) paratracheal, subcarinal (SUVmax 5.4) and right pulmonary hilar (SUVmax 4.4) regions. Endobronchial ultrasound biopsy was obtained from the ipso and contralateral hilar and mediastinal lymphadenopathies: the subcarinal mass was positive for metastatic adenocarcinoma (TTF1+). Magnetic resonance imaging ruled out the presence of brain metastasis. Spirometry revealed forced vital capacity 111%, forced expiratory volume in 1 s 87%, and diffusing capacity of carbon monoxide 66%. Stair climb test was >22 m. After discussion in the multidisciplinary meeting, it was considered a case of locally advanced lung adenocarcinoma with N2 single station involvement, confirmed histologically

[☆] Please cite this article as: Gómez Hernández MT, Alvarado IR, Novoa N, Jiménez López MF. Enfermedad pulmonar relacionada con inmunoglobulina G4 como hallazgo incidental tras resección quirúrgica de carcinoma pulmonar. Arch Bronconeumol. 2019;55:276–278.