



Fig. 1. Upper panel: computed tomography (CT) images of the chest obtained at the time of presentation with pneumothorax and pleural effusion. Consolidation is shown in the right middle lobe (first and second panel), and air-fluid levels are shown in the right pleural space (third panel). Tree-in-bud opacification is shown in both lungs. Lower panel: CT images obtained 3 months following commencement of treatment for NTM disease. There is resolution of the right sided pleural effusion and pneumothorax, with re-expansion of the lung and improvement in consolidation of the right middle lobe.

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New Outpatient Management Based on a Respiratory Virtual Clinic. An Effective Measure in Times of Austerity[☆]



Una nueva gestión ambulatoria basada en la consulta virtual de neumología. Una medida efectiva en tiempos de «austeridad»

To the Editor:

Specialized care outpatient clinics tend to be inundated by high numbers of patients referred from primary care centers (PCC).¹ This

overload seriously undermines the management of waiting lists and delays the evaluation of patients with severe diseases.^{2,3} Long waiting lists are the result of a shortage of human resources, work systems, and interdependency between PCC and specialized care facilities. In the Canary Islands, these problems are compounded by geographical obstacles and the remote location of communities. Tenerife has a surface area of 2034.38 km² and an estimated population of 906,854 inhabitants, making it the most heavily populated island in Spain. Most of the population is concentrated in 3 areas: Santa Cruz de Tenerife, San Cristobal de la Laguna and the municipalities of Arona and Adeje. The latter 2, located in the south of the island, have a resident population of 200,000 inhabitants, and the nearest tertiary hospital is at least 80 km away.

The disperse population in the south of the island and their ensuing transport difficulties led to the implementation in June 2012 of the Respiratory Virtual Clinic, the aim of which was to manage and prioritize pulmonology referrals from PCC. The Respiratory

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Table 1
Number of Visits and Patients Seen in the Pulmonology Department.

	June 2011 – May 2012	June 2012 – May 2013	June 2013 – May 2014
Clinic visits in person	4099	3948	3558
First appointments	2006	1016	893
Follow-up appointments	2093	2674	2142
Virtual visits		1470	1427
Dedicated COPD clinic		258	523
Number of hospital admissions	Year 2012 501	Year 2013 417	Year 2014 195

Virtual Clinic takes place 2 days a week, and up to 15 cases are discussed in each session. The consultant pulmonologist prioritizes cases by examining the data provided online by the PCC (clinical history, physical examination, complementary tests) and performs a triage, by either indicating to the treating physician the procedure to follow, or by personally evaluating the patient. In the latter case, the tests required for the first appointment are performed on the same day in the outpatient clinic (chest X-ray, spirometry or blood gases), and the patient is referred directly to the right clinic: either the general pulmonology clinic held 4 days a week or else the dedicated COPD clinic, which takes place once a week. Patients already monitored in the pulmonology clinic whose respiratory disease worsens can immediately access either of the 2 clinics without the need for a referral from the PCC.

In less than 3 years, this formula has reduced the overall number of PCC consultations by 14%, and the number of first appointments by 56%. The reduction in workload meant that chronic patients can be more closely monitored, leading to a 61% reduction in the number of hospital admissions to the pulmonology department, while follow-up appointments rose by 15% (Table 1).

Finally, the Respiratory Virtual Clinic increased the number of consultations that could be resolved by the PCC by 19%, underscoring the efficiency of this type of management.

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Pleural Empyema in a Pneumonectomized Patient as a Complication of Colonoscopy*



Empiema pleural en paciente neumonectomizado como complicación de una videocolonoscopia

To the Editor:

Post-pneumonectomy empyema (PPE) is a serious disease generally associated with high rates of post-operative morbidity and mortality. The most common cause is bacterial contamination from bronchopleural fistula. Infections from other intrathoracic sources, such as mediastinitis, pneumonia, and hematogenous dissemination from extrathoracic sources, are less common.

We report the case of a pneumonectomized patient who developed empyema in the residual chest cavity as a result of bacteremia following video-assisted colonoscopy. To our knowledge, this is the first report in the medical literature of pleural empyema as a complication of colonoscopy.

A 63-year-old man presented with a history of right pneumonectomy by video-assisted thoracoscopy 2 years previously for squamous cell lung cancer, with no evidence of recurrence to date.

Following a video-assisted colonoscopy, the patient developed an episode of fever and bacteremia, associated with pain and edema in the same hemithorax as the pneumonectomy. Pleural fluid was drained by thoracentesis and blood cultures were performed, revealing empyema and bacteremia caused by *Escherichia coli*, respectively.

When the patient was admitted to the emergency department of our hospital, he was febrile, and had dyspnea, arterial hypotension, tachycardia and tachypnea, and leukocytosis on blood tests. Chest multislice tomography showed an abscess occupying the entire remaining pleural cavity, impinging on the overlying chest wall (Fig. 1). The patient was hemodynamically stabilized and pleural decortication was performed by video-assisted thoracoscopy. His progress was satisfactory and he was discharged 10 days after surgery.

The main factors associated with PPE are related with post-operative complications,¹ such as bronchopleural fistula, or intra-operative events, such as contamination of the pleural cavity; the condition generally develops in the first few weeks after surgery. Presentation up to 1 year after pneumonectomy, described as late-onset PPE, is extremely rare.² In this entity, infection of the residual chest cavity due to hematogenous bacterial dissemination from a distant focus of sepsis can be observed. Our patient presented a clinical picture of empyema of the residual cavity due to an episode of septicemia after video-assisted colonoscopy. The main complications of gastrointestinal tract endoscopies are diverse, the most common being post-colonoscopy pain, perforated gut, and gastrointestinal bleeding.³ Although septic complications have been described after the passage of bacteria from the gastrointestinal tract to the bloodstream,⁴ these are rare.

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