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## Pulmonary Lymphomatoid Granulomatosis. A Rare Entity in the Differential Diagnosis of Pulmonary Nodules<sup>☆</sup>



**Granulomatosis linfomatoide. Una entidad infrecuente a tener en cuenta en el diagnóstico diferencial de la imagen en suelta de globos**

Dear Editor,

Lymphomatoid granulomatosis (LG) is an uncommon entity, classified by the WHO among the group of B-cell lymphoproliferative syndromes associated with Epstein–Barr virus (EBV) infection.<sup>1</sup> As lung is affected in more than 90% of cases, clinicians must establish a differential diagnosis against other diseases such as Wegener's granulomatosis, lymphoma or pulmonary metastases.

We report the case of a 76-year-old patient, with no toxic habits, hypertensive, with the chance finding on a chest X-ray of a “balloon release” image, finally diagnosed as LG. The patient was asymptomatic. No significant findings were observed on physical examination and lung auscultation was normal. Minimal leukocy-



**Fig. 1.** Chest X-ray, showing a chance finding of images of bilateral nodules resembling a “balloon release”, predominantly in the mid and lower fields.

tosis was seen on clinical laboratory testing, which was normal for tumor markers. Imaging tests showed the presence of bilateral pulmonary nodules, predominantly in the lower lobes (Fig. 1), some with air bronchogram sign and occasional central cavities. Transbronchial and transthoracic biopsies were performed, but did not yield a diagnosis. An atypical surgical resection of a pulmonary node was performed, showing polymorphous lymphocytic infiltrate with an angiocentric and angiodestructive pattern, consisting of aberrant CD20 positive lymphoid cells on a background of small sized lymphocytes. An EBER probe was used to demonstrate the presence of EBV-infected cells, establishing a definitive diagnosis of grade 2 LG.<sup>2</sup>

In view of the radiological progression over the previous months, treatment was started with prednisone and IFN  $\alpha$ -2b. Initial response was good, but after 18 months of treatment, the patient died from the disease.

LG generally occurs between the ages of 50 and 70 years, mainly in men.

It is one of the B-cell lymphoproliferative syndromes associated with EBV infection, and appears more frequently in immunosuppressed patients, and in association with the administration of azathioprine and methotrexate.<sup>2,3</sup>

The most frequently affected organ is the lung, but it can also affect the skin, the kidneys and the nervous system.

Patients may be asymptomatic at the time of diagnosis, but up to 60% can present non-specific symptoms such as cough, fever, rash, subcutaneous nodules, asthenia and anorexia, dyspnea, chest pain, ataxia or peripheral neuropathy.

Imaging tests typically show bilateral nodules and masses with peribronchovascular distribution, mainly in the lower lobes, which may converge or form central cavities. FDG uptake on PET is variable.<sup>4</sup>

Histopathological diagnosis is based on the triad of polymorphic lymphoid infiltrates, vasculitis, and focal necrosis.

The WHO proposes a histological classification according to the prominence of B-cells, from grade 1 to 3. The characteristics of these cells are similar to those of diffuse B-cell lymphoma.<sup>1</sup>

Treatment requires discontinuation of potentially causative medications, plus chemotherapy with IFN  $\alpha$ -2b<sup>5</sup> or rituximab.

The decision to treat must be based on the presence of symptoms, extensive involvement, or high-grade histopathological lesions.

Although rates of spontaneous remission of up to 20% have been reported, most cases progress, and mean survival is between 1 and 6 years.

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## External Beam Radiation Therapy: A Treatment Modality in Diffuse Tracheobronchial Amyloidosis<sup>☆</sup>



### *Amyloidosis traqueobronquial difusa: uso de radioterapia local externa como modalidad de tratamiento*

Dear Editor,

Amyloidosis is a disease of unknown origin that consists of abnormal extracellular deposit of amyloid material in various organs. It is usually classified as either primary or secondary, and localized or systemic, depending on which organs are involved. Primary tracheobronchial amyloidosis (TBA) is considered a variant of localized pulmonary amyloidosis.

We report the case of a 65-year-old man, former smoker (18 pack-years), referred to our hospital due to hemoptysis. Baseline examination showed modified Medical Research Council (MMRC) dyspnea scale 2, and a history of orthopnea of several months. Computed tomography (CT) showed diffuse circumferential thickening of the tracheal wall, and main, lobar and segmentary bronchi, with no pulmonary parenchymal involvement. Fiberoptic bronchoscopy showed partial tracheal collapse due to excessive mobility and loss of structure of the membranous wall, with fragile mucosa and whitish plaques. The main, lobar and segmentary carina were widened and misshapen (Fig. 1). Bronchial biopsy was indicative of amyloidosis. Lung function tests showed FEV1 2500 cc (81%), FVC 3430 cc (88%), FEV1/FVC 73. In view of the diffuse involvement of the disease, endoscopic treatment with laser and/or placement of endobronchial stents was ruled out. In the absence of evidence of systemic involvement, external beam radiation therapy (EBR) to a total dose of 24 Gy in 12 fractions of 2 Gy was proposed.

After completion of treatment, clinical improvement was observed and the patient was able to tolerate a supine decubitus position, with MMRC dyspnea scale 1, lung function test results

FEV1 3210 cc [101%], FVC 4210 cc [104%], FEV1/FVC 76. Endoscopy showed mild stenosis of the left upper and lower lobe bronchi, due to mucosal thickening (Fig. 1). Side effects included spells of supraventricular tachycardia managed with medication, and grade 1 esophagitis. The patient is currently clinically and functionally stable, 1 year after treatment.

BTA is an uncommon variant of amyloidosis that affects the lower respiratory tract. Amyloid deposits appear on the airway walls as polypoid nodules and/or submucosal plaques. It mainly affects middle-aged men. Clinical manifestations are non-specific: cough, wheezing, dyspnea, hemoptysis, etc.<sup>1</sup> Chest CT provides information on the involvement and extent of the disease, revealing different degrees of involvement of the respiratory tract walls, which appear thickened with narrowing of the lumen. Lung function tests often show an obstructive pattern, but when the involvement is distal, results may be normal. Diagnosis is obtained from bronchial biopsy.<sup>1</sup>

Evidence regarding treatment is limited and based on endoscopic recanalization techniques using CO<sub>2</sub> and Nd:YAG lasers, cryosurgery, or the placement of endobronchial stents.<sup>2</sup> However, the benefits in cases of diffuse involvement are small, and disease progression is not halted, so repeated resections with the attendant risk of bleeding are required. EBR is a promising alternative in the treatment of diffuse disease, and long term benefits have been reported. This technique has been used successfully in benign disease, with doses of 2 Gy providing an anti-inflammatory effect.<sup>3</sup> This treatment was first described in 1998 by Kurrus et al.<sup>4</sup> Since then, evidence remains limited, but doses of 20 Gy administered in a fractionated manner cause a radiological, endoscopic and functional response, the effects of which are maintained for about 2 years.<sup>5</sup> Our patient received treatment at the standard dose described in the literature, showing radiological, functional and endoscopic improvement that has been maintained to date. Although the dose has not yet been well defined, most patients undergoing this technique had mild side effects.<sup>5</sup>

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