the radiological results. During the treatment for tuberculosis, her symptoms were not completely resolved. When they worsened, she sought assistance in our outpatient clinic. After routine tests, a CT scan was peformed. Bronchiectasis was observed in the right middle lobe and in the lower left, as well as reticulonodular density predominantly in the lower left lobes of both lungs. Subpleural conservation of these lesions was also observed (fig. 1). She was hospitalised and antibiotic treatment was administered, due to the purulent sputum and fever. After the treatment, she was advised to undergo a bronchoscopy, but the patient refused.

One month later, her symptoms had worsened and another CT lung scan was performed. The lesions showed signs of progression. A bronchoscopy was performed, as well as a transbronchial fine needle aspiration, bronchioalveolar lavage, and a transbronchial biopsy. The results of these procedures did not reveal any indication about the nature of the illness, so the patient was advised to undergo a surgical lung biopsy and wedge biopsy. The pathological diagnosis of the patient was inspecific interstitial pneumonia (NII) and treatment with 1 mg/kg of prednisolone was started.

The radiological findings typical in patients with idiopathic pulmonary fibrosis is peripheral reticular opacity predominantly in the lung bases. In some cases, the CT features of NII may overlap with those most commonly found in the usual NII type (NIU). As with NIU, the abnormalities in NII generally predominate in the middle and lower segments of the lungs. However, they are less likely to occur in a subpleural distribution in NII than in NIU; in fact, the absence of subpleural involvement leads to a marked preference for NII.[3] In our case, the lesions were located predominantly in the lower lobe and, also, their subpleural preservation was observed.

The fact that tuberculosis is more common in Turkey led to a misdiagnosis, due to the fact that some of the symptoms present were also seen in tuberculosis, and the initial lesions did not respond to inspecific treatment. As in our case, there are many lesions that simulate those of tuberculosis and, therefore, it must first be ruled out in any region where their incidence is frequent. In this patient, tuberculosis was first diagnosed, although sputum staining to detect acid-resistant tuberculosis bacteria was negative. The patient received treatment for tuberculosis (300 mg/day isoniazide, 600 mg/day rifampicine, 1,500 mg/day pyrazinamide, and 1,000 mg/day etambutol). Although she completed the treatment, she did not recover. Given the situation, the possiblity of other illnesses was investigated and, thanks to the surgical biospy, the diagnosis of NII was achieved. Surgical lung biopsy is the definitive procedure to obtain a diagnosis of NII. As in our case, there is much data to support the value of surgical lung biopsies to achieve a final diagnosis, in many cases, of DPLD.[2]

According to this case, NII can also be considered in situations in which it is not possible to interpret the radiological findings, although the symptoms are not typical in this disease, for example, loss of appetite and weight, and night sweats.

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Miliary Tuberculosis Due to BCG in an Asymptomatic Patient: Initial Onset or a Condition Not Yet Described?

Tuberculosis miliar por BCG en un paciente asintomático: ¿afectación inicial o una entidad no descrita?

To the Editor:

Bacille Calmette-Guerin (BCG) is a live attenuated strain of *Mycobacterium bovis,* a species of the *Mycobacterium tuberculosis complex* group. BCG have been used in the treatment of in situ and superficial bladder cancer since the decade of the 70s.[1-3] Its effectiveness has been demonstrated in numerous studies, although its use is not free of complications, which have been reported to be local and systemic reactions. Although very rare, but with a high mortality, one of these complications is miliary tuberculosis (MTB).[1,2] We report a rare case of a patient who, in the absence of respiratory or general symptoms, was diagnosed with a TBM after intravesical BCG administration. He was a 62 year old man without toxic habits and with no respiratory history of interest. After consulting for hematuria, he was diagnosed with stage I transurethral endoscopic papillary transitional cell carcinoma, so three weeks later he began treatment with monthly intravesical administrations of BCG (Connaught strain, 10^9 colony forming units per dose). Anti-tuberculosis prophylaxis was not carried out prior to treatment. After the sixth cycle a colon CT was carried out to follow up on a prior intestinal polyp disease that showed a micronodular pattern in the upper cuts. The patient denied having any general or respiratory symptomatology and the analyses were completed, including HIV status and phase reactants, all completely normal. Based on the radiologic findings, a chest CT was carried out (fig. 1) that confirmed a diffuse, bilateral micronodular pattern without finding other parenchymal or mediastinic lesions. Chest X-ray at this time came out normal. A bronchoscopy with transbronchial biopsies (BTB) was carried out as well as bronchoalveolar lavage (LBA). The microscopic description of the BTB was non-necrotizing epithelioid granulomas. Stains and cultures for mycobacteria and DNA and RNA amplification techniques for *M. tuberculosis* were negative in the LBA. Specific PCR for *M. tuberculosis* were positive in the biopsies. A diagnosis was made of probable TBM secondary to endovesical administration of BCG. Anti-tuberculosis treatment was initiated with rifampicine and isoniazide for 9 months, to which etabutol was added during the first two months, without adverse effects from the medication during follow-up. In the follow-up chest CT at 3 months a reduction in the number of nodules was seen with complete disappearance in some lung segments.

Although intravesical BCG administration is usually well tolerated by most patients, multiple local complications have been reported such as cystitis, prostatitis, orchitis, urethral obstruction, and also systemic reactions, including fever and less frequently (<1%), rash, polyarthralgia and arthritis, granulomatous hepatitis and various forms of respiratory impairment.[1-4] Among these various types of parenchymal involvement should be highlighted, such as the TBM, interstitial pneumonitis or diffuse alveolar damage, which in most

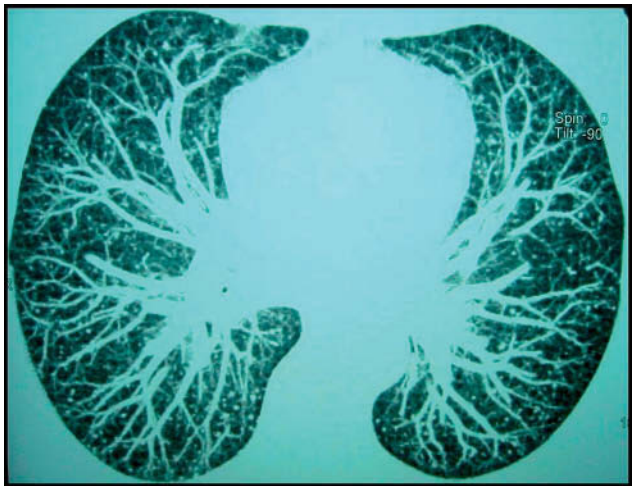

Figure 1. Bilateral micronodular pattern in a thoracic computerized tomography image with multiplanar reconstruction (MIP).

cases is of a serious nature.[1,2,4] The pathogenesis of systemic involvement is a subject of discussion. While some authors believe that this is a systemic infection due to hematogenous spread from the bladder, others believe it is a type IV hypersensitivity mechanism to the BCG, based on the negative Ziehl-Neelsen staining and cultures.[2-4] The factors that guide the diagnosis of infection spread include staining or positive mycobacterial culture and the presence of noncaseating granulomas in distant places.[3,4] In this case, although the stain and culture for mycobacteria were negative, noncaseating granulomas were found and nucleic acid was detected from the *M. tuberculosis complex* group by PCR in the BTB, which, together with the history of BCG administration, made the diagnosis of TBM by BCG very likely. However, the histological and PCR findings could also be due to affectation by M. tuberculosis or another species of the *M. tuberculosis complex* group.

The uniqueness of this case is that the patient reported no respiratory or general symptoms, and the findings were accidental after performing a radiologic examination for another reason. In all cases described in the literature of TBM after intravesical BCG administration, they presented with a major general syndrome including fever, which often progressed to respiratory failure and death, despite adequate treatment in some cases.[4,5] However, this is the first case of asymptomatic TBM secondary to BCG administration reported in the literature, which may be due to an accidental finding at an early stage of the disease or the possibility not mentioned until now of the involvement of a silent, self-limiting military subtype of this bacillus in an immunocompetent individual.

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Micronodular X-ray Pattern as a Manifestation of a Lung Adenocarcinoma

Patrón radiológico micronodular como manifestación de un adenocarcinoma pulmonar

To the Editor:

The radiological appearance of multiple micronodules as a presentation of a lung tumour has been reported, although it is very rare (fig. 1).

We present the case of a 71-year old women, a never smoker, with no known drug allergies and with a history of hypertension, iatrogenic hyperthyroidism, epilepsy and surgical resection of ovarian cysts. She was being treated with levothyroxine, valproic acid, omeprazol, captopril and diclofenac. At baseline, she showed no respiratory symptoms. She was admitted after a month of progressive dyspnea until symptoms appeared in activities minimal effort, coughing with slight mucous expectoration, wheezing, pleuritic rib pain on both sides and two-pillow orthopnea. During this time she had received treatment with antibiotics and corticoids and showed no improvement. There was no history of having been exposed to smoke nor environmental particles in the workplace. She had a dog as a pet. Four months earlier a neighbour installed a henhouse at the side of her terraced home. Physical examination showed baseline arterial oxygen saturation of 80%, tachypnea while talking at 30 rpm and crackling in the left posterior hemothorax except for the apex. Hospital admission tests revealed: leukocytosis: 1.1700/UI with 79% neutrophils, blood gas analysis conducted with unknown O_2: ApO_2: 80 mmHg; PCO_2: 30 mmHg; pH: 7,52; $HCO_3^?$: 26 mEq; SaO_2: 97%. Chest X-ray showed a diffuse interstitial and alveolar pattern with a tendency to coalesce. In the chest CT numerous micromodules spread in a random fashion could be observed throughout the lung parenchyma with confluent, condensatory patchy areas of a cottony alveolar nature, accompanied by mild right and moderate left pleural effusion as well as scarce and insignificant mediastinal adenopathies. While she was admitted, other studies were performed including: Diagnostic thoracentesis showing lymphocytic exudate whose cytology was inspecific; blood chemistry showing IgG against *Coxiella* 1/160 with negative IgM; sputum study in which *Candida albicans* was isolated (possible oropharyngeal contamination), smear negative; elevation of tumour markers CA 15.3, CA 125 and CEA; angiotensin enzyme converter within normal values; mammography, showing a 9 mm nodule in the right breast with likely benign origin