Endotracheal Tuberculosis in a Patient with Smear-Negative Sputum☆

Tuberculosis endotraqueal en una paciente no bacilífera

To the Editor,

Unlike the situation in other countries, mucosal involvement of the airway in tuberculosis is very rare in developed countries.[1] In series of Asian patients, endotracheal involvement is reported in a small percentage of patients with endobronchial disease[2]; however, we found no descriptions of this presentation by Spanish authors (PubMed search, terms: *endotracheal tuberculosis* or *tracheal tuberculosis* and *Spain*). No endotracheal disease was reported in any of the 73 cases of tuberculosis with endobronchial disease included in the largest Spanish series.[3] It has been suggested that airway involvement in tuberculosis is caused by the presence of a heavy endobronchial bacterial load.[4] Indeed, in the series of Jung et al., 232 of 233 patients with endobronchial disease had a positive direct sputum smear.[2]

However, we report a case of tracheal involvement in tuberculosis with some exceptional features: the patient did not have other endobronchial lesions, and the sputum smear stains before bronchoscopy were negative for *Mycobacterium tuberculosis*.

A 49-year-old women of Spanish nationality was referred to our clinic with a 1-year history of cough with scant expectoration, dysphonia, recurrent episodes of low-grade fever, and poor response to different antibiotic regimens. She was a former smoker of 10 pack-years with no other history of interest. Lung function tests were normal and chest high-resolution computed tomography revealed bronchiectasis in the apical segments of both lower lobes and in the right upper lobe, tree-in-bud infiltrates, and thickening of the posterior tracheal wall with no hilar or mediastinal lymphadenopathies. Sputum smears were negative and a bronchoscopy was performed which showed a raised lesion of necrotic appearance in the posterior wall of the middle third of the trachea, with mucosa of a granular appearance in the circumference (Fig. 1A). The mucosa in the rest of the bronchial tree was of normal appearance. Ziehl-Neelsen staining was negative in bronchial aspiration material and bronchoalveolar lavage, but, in contrast, the PCR was positive for *Mycobacterium* complex. Acid alcohol-fast bacilli were observed in sputum collected after the endoscopic exploration and necrotizing granulomas were seen in the biopsy. After antituberculosis treatment, complete resolution of the tracheal lesions was observed (Fig. 1B).

The incidence of endotracheal tuberculosis is difficult to establish since in many cases bronchoscopy is not considered necessary for diagnosis.[3] A review of the literature revealed no descriptions of tracheal tuberculosis in Spain.[3,5] However, it is not unusual in Asian countries.[2,6] In a prospective study of 429 patients with tuberculosis who underwent bronchoscopy, Jung et al. found bronchial disease in up to 50% and tracheal disease in 16% of the cases.[2] As in our case, it occurs more frequently in women. The predominance of the female sex has been attributed to prolonged exposure to bacilli, due in part to the narrowness of the airways.[2,7]

Although most patients with tracheobronchial tuberculosis improve with correct treatment, up to 20% of cases have been associated with the development of tracheobronchial stenosis.[2,7,8] In Spain, however, the origin of the involvement was not attributed to tuberculosis in any of the cases included in a series of 136 patients treated for central airways stenosis.[5]

In conclusion, tracheobronchial tuberculosis is an entity which should be considered in cases of tuberculosis, taking into account the importance of the role of bronchoscopy in its identification, particularly in women with prolonged symptoms. Establishing a diagnosis and early treatment can be crucial to prevent the development of complications.

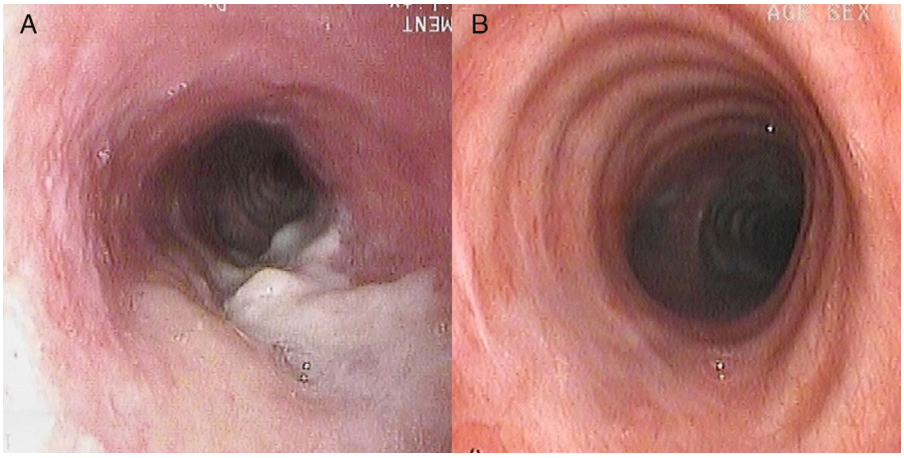

Fig. 1. Endoscopic image of the trachea. (A) Diffuse thickening of the wall of the trachea with a necrotic lesion can be observed. (B) Resolution of lesions after antituberculosis treatment.

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Lung Cancer Screening With Low-Dose Computed Tomography is not a Question of Logistics☆

Cribado de cáncer de pulmón con tomografía computarizada de baja dosis. No es cuestión de logística

To the Editor,

We believe that the conclusions of the chapter "Early diagnosis of lung cancer. The future of screening", in the recently published SEPAR monograph,[1] which claim that the absence of a lung cancer screening program in Spain is more a question of logistics than money, merit a special comment.

While we agree with some of the statements, we disagree with many others. For example, no reference is made to the barely perceptible increase in the number of early-stage tumors detected in the NLST.[2] Cases diagnosed at stage I did not increase more than 10% when the third screening round was compared round with the first, and moreover, in all rounds, the proportion of cases detected at stage III and IV remained steady at 30%. Detecting disease at an earlier stage is the cornerstone of screening programs, since it indicates a change in the clinical course of the disease. The high percentage of detection of lung cancer at advanced stages indicates that screening is not effective in a significant proportion of the subjects analyzed.

In our opinion, this understates the risk induced by radiation, since the proposed screening programs involve an annual LDCT. The authors point out correctly that in each round there are approximately 25% positives. False positives can be reduced by using volumetric criteria instead of diameter, as indicated by the NELSON study. A positive result involves performing at least one diagnostic CT (in addition to the follow-up CTs required if subcentimeter nodules are detected), which considerably increases exposure to radiation. Approximately every 4 years, participants would receive at least 12 mSv (4 LDCT+standard CT), which between the ages of 55 and 80 years would add up to a total of 72 mSv. It has been calculated that participants in a screening program would receive more radiation than atomic bomb survivors or nuclear plant workers (up to 280 mSv in the most conservative estimate).[3]

Lung cancer screening is compared with breast and colorectal cancer screening, but they are not comparable. Unlike lung cancer screening, which is selective (smokers or former smokers), breast and colorectal screening programs are population programs, in which a positive finding on mammography or occult blood in stool can generally be confirmed in a matter of days by image-guided biopsy or colonoscopy with biopsy. A positive finding in LC screening of a subcentimeter nodule might persist for months or years before growth is confirmed or ruled out and subsequent actions are planned.

No European study has proved the effectiveness of screening. Additionally, a recent study using NLST data[4] suggested that 2-yearly screening would be just as effective as annual screening, and the accompanying editorial even claimed that the annual screening interval is not based on biological evidence, but rather on a pragmatic decision based on organizational considerations. Breast cancer screening is performed every 2 years. Data are available in Spain on the organizational aspects of a screening program.[5] Up to 1,700,000 individuals meet the screening criteria, and approximately 162 scanners dedicated exclusively to screening would be needed. The scanners alone would cost close to €1 bn.

While economic and organizational aspects are relevant, we firmly believe that the risk–benefit balance in the screening of lung cancer with LDCT is still questionable. Although screening might reduce lung cancer deaths from 21 to 18 individuals for each 1000 screened, the level of iatrogenic complications would be high. In our opinion, scientific societies should debate these issues before presenting them in a text which might be taken as recommendations, but which, in this case, do not have sufficient consensus.

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