

Isolated intrathoracic tuberculous lymphadenopathy

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ABSTRACT: We report an 82 yr old man with isolated intrathoracic lymphadenopathy of tuberculous origin, which is an extremely uncommon presentation of tuberculosis especially in elderly Caucasian patients. The diagnosis was suggested by the computerized tomographic (CT)-scan showing central hypodense areas after contrast, and was subsequently proved by mediastinoscopic biopsy with histological and microbiological analysis. The atypical presentation of tuberculosis together with a negative two-step 5 international units of purified protein derivative (IU-PPD) tuberculin skin test and a frequent contact with a cavernous index case points towards a primary infection in this patient.

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Intrathoracic tuberculous lymphadenopathy (ITL) has been a frequently encountered complication of primary lung tuberculosis in children but in the adult it has been reported as an unusual presentation [1-3]. ITL without parenchymal infiltrations in the adult is an even rarer presentation and is commonly initially interpreted as a malignancy, especially lymphoma [3].

We describe the presence of ITL without parenchymal infiltration in an old man, with a nonspecific clinical presentation, a negative two-step tuberculin skin test, but a suggestive computerized tomographic (CT)-scan and a diagnostic mediastinoscopy. We discuss this very unusual manifestation of tuberculosis (TB) in the elderly in relation to data in the literature.

Case report

An 82 yr old, single man presented with a two month history of anorexia, weight loss and tiredness. The immediate reason for admission was cough and dyspnoea. On physical examination, a man in relatively good health was seen, however, a temperature of 37.5°C was noted. Auscultation of the lungs was unremarkable and no peripheral lymphadenopathies were palpated. The laboratory examination showed a sedimentation rate of 112 mm after 1 h, but otherwise normal results, including liver function tests.

Chest X-ray revealed a broadened upper mediastinum (fig. 1) without parenchymal lung infiltrations. CT-scan of the thorax showed a non-homogeneous mass in the right paratracheal region (fig. 2, upper). On the postcontrast scan (fig. 2, lower) multifocal areas of lower density were seen in this mass. CT-scan of the abdomen showed no evidence of concomitant intra-abdominal



Fig. 1. - Chest X-ray showing broadened upper mediastinum.

lymph node enlargement. A fiberoptic bronchoscopic (FOB) examination did not reveal any tumoral process or eroding mucosa. Bone marrow examination showed no abnormal cells.

Mediastinoscopy was performed which showed a smooth mass in which aorta and trachea were merged and which impeded further investigation of lower lymphadenopathies. Histological examination of the mass showed granulomas with centrally necrotic material. Staining of the biopsy specimen for acid-fast bacilli (AFB) was positive and culture of the biopsy specimen grew fully sensitive *Mycobacterium tuberculosis* after 6 weeks.

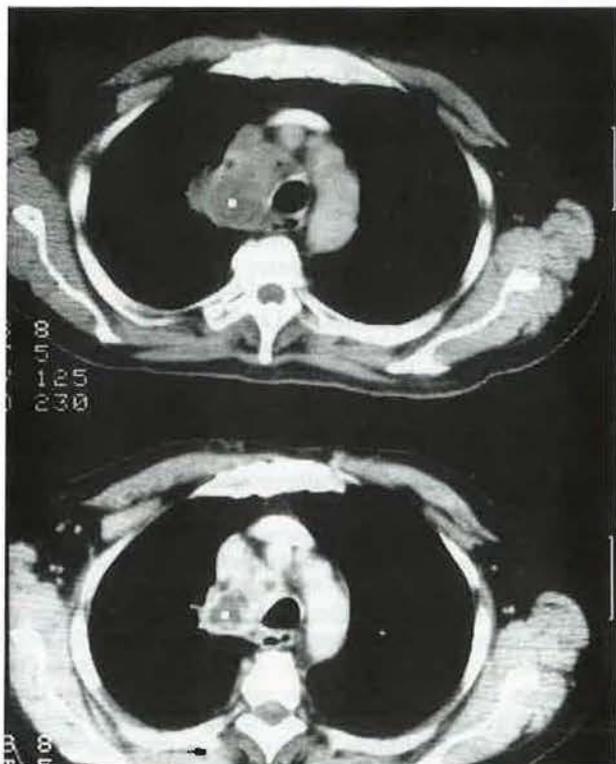


Fig. 2. — CT scans of thorax. The lower scan was taken post contrast injection.

A two-step tuberculin skin test with 5 international units (IU) of purified protein derivative (PPD) was negative on both occasions (interval of one week between the two applications).

Treatment with isoniazid, rifampicin and ethambutol for 1 yr led to clinical improvement and the chest X-ray abnormality cleared up. A tuberculin skin test with 5 IU-PPD after one year gave an induration of 12 mm.

Epidemiological investigation detected another patient of the same village, who had been hospitalized a few weeks earlier with cavitory tuberculous disease. Once a week they had met when playing cards in the local association of retired people. The epidemiological survey did not reveal any other case of tuberculosis disease.

One year after admission, antituberculous therapy was stopped. A tuberculin skin test with 5 IU-PPD showed an induration of 12 mm at that time.

Discussion

We report a patient with isolated ITL on chest X-ray, which was proved to be of tuberculous aetiology.

LU *et al.* [2], in their review of the literature in 1978, described only 23 cases of isolated ITL. Isolated ITL seems to be even less frequent in Caucasian than in

non-Caucasian patients, which has been attributed to environmental and racial characteristics, previous exposure to tuberculous infections and differences in susceptibility and immunological reaction [2, 4, 5]. It has to be emphasized that isolated ITL is even more uncommon in the elderly. Recently, four reviews describing clinical and radiographic features of pulmonary tuberculosis (PT) in elderly patients, did not report any case of ITL [6–9]. Therefore, TB is generally not considered in the initial differential diagnosis and ITL is commonly interpreted as malignancy, especially lymphoma [3].

We agree with AMOROSA *et al.* [10] that isolated ITL will probably be encountered more often in the future, owing to the changed epidemiological appearances of TB.

CT-scan abnormalities in our patient, consisting of low density areas within the mediastinal lymphadenopathies on the postcontrast images, have been described by IM *et al.* [11] as very suggestive for ITL. They considered CT-scan very helpful in differentiating mediastinal masses due to ITL from other causes of mediastinal lymphadenopathy. Central hypodense areas in mediastinal masses may, however, also be found in malignancies, especially thymoma but associated abnormalities generally allow for differential diagnosis by other non-invasive techniques to be made: in a thymoma the mediastinal mass is distinguishable from adenopathies; metastatic adenopathies are mostly associated with a non-occult primary malignancy which may frequently be a testicular tumour if the adenopathies show central hypodense areas; a lymphoma may cause an identical CT-scan abnormality to ITL but is often recognized because of associated features.

Although the CT-scan may thus be of valuable diagnostic help, it should be complemented by a histological and microbiological confirmation especially in the elderly patient in whom the incidence of mediastinal malignancy is much higher than that of ITL. Therefore, mediastinoscopy should still be the standard method for diagnosis and should provide tissue for histological examination, staining and culture [12].

The question arises whether isolated ITL in the elderly patients, represents primary or postprimary TB [3, 10]. Primary TB, indeed, implies a source of infection which has to be traced because of the risk for endemic spread of infection, especially in institutionalized elderly patients, as was shown by STEAD *et al.* [13]. A classical method for documenting primary infection is the conversion of the tuberculin skin test. However, especially in elderly patients, the interpretation of a negative tuberculin skin test may be difficult, since temporary suppression of the immunological system or loss of cutaneous tuberculin sensitivity in untreated active PT becomes more frequent in this age group, for reasons not yet fully understood [14]. In addition, the tuberculin reactivity may diminish with age in previously infected healthy subjects, but be enhanced again by a booster phenomenon of a test consisting of two to four steps [15]. However, the presence of the cavernous index case is a strong evidence for primary TB in our patient. Such primary TB in the

elderly may be a second primary infection due to the fact that the patient had outlived the bacilli of a previous infection as well as the T-cell clone that responded to tuberculin.

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Adénopathie tuberculeuse intrathoracique isolée. P. Van den Brande, J. Vijgen, M. Demedts.

RÉSUMÉ: Nous rapportons l'observation d'un homme âgé de 82 ans avec des ganglions médiastinaux solitaires. L'origine tuberculeuse de cette lésion était suggérée par le CT-scan démontrant des zones centrales hypodenses. Cette étiologie a été confirmée par l'examen histologique et des cultures du tissu obtenu par la médiastinoscopie. Cette localisation de la tuberculose est très rare dans les vieillards caucasiens. Une telle lésion peut être d'origine tuberculeuse primaire plus-tôt que du type de réactivation, et nécessite le dépistage du cas contaminateur. *Eur Respir J.*, 1991, 4, 758-760.