

Foreign Body Granuloma in Intravenous Drug Addict

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Abstract

Interstitial lung diseases are a diverse group of diseases of different aetiologies including occupational exposures, drugs, autoimmune disease and idiopathic interstitial pneumonias. Transbronchial lung biopsy may diagnose some of these causes but oftenly patients are referred to surgery when bronchoscopic biopsies fail. Medical thoracoscopic lung biopsy (MTLB) under conscious sedation with a coagulation forceps may be an alternative to surgery or video assisted thoracoscopic surgery in these patients.

Keywords: *Interstitial lung disease; Bronchial biopsy; Medical thoracoscopy*

Introduction

Forceps lung biopsies taken during medical thoracoscopy/pleuroscopy have been shown to be quite efficient, the technique has been used for many years by chest physicians [1,2]. However, the indications for thoracoscopic/pleuroscopic lung biopsies in diffuse lung diseases have substantially decreased. The decrease is due to the improved diagnostic results of bronchoscopy using transbronchial lung biopsies and bronchoalveolar lavage, as well as to the development of high-resolution CT (HRCT). However, medical thoracoscopy and lung biopsies are suitable options for those who are familiar with the technique, which is easy and safe. The advantage of medical thoracoscopy is that it is less invasive than VATS, using local anaesthesia and no intubation. In comparison with bronchoscopy, medical thoracoscopy/pleuroscopy is more invasive but presents several advantages. It provides significantly larger samples and allows the physician to choose the biopsy site; at least three biopsy samples should be taken.

Case Report

Male patient, 37 years old, works as a blacksmith. He is a heavy smoker and is known for heroin and drug addiction. His condition started one month before admission by fever and dyspnea of gradual onset progressive course without orthopnea or paroxysmal nocturnal dyspnea or chest wheezes. The patient had cough and expectoration of minimal amount of whitish sputum some time yellowish. The condition was also associated with right infra mammary stitching chest pain referred to the back increase by cough and decreased by analgesics. Clinical examination was unremarkable other than cubital Skin marks of IV drug abuse. Chest x rays and CT chest were done (Figure 1 and Figure 2) Labs were normal except for an elevated ESR. Tuberculin skin test was negative; Sputum Acid Fast Bacilli was negative. Echo findings: Mobile irregular mass attached to the anterior leaflet of the tricuspid valve, severe tricuspid regurge. Dilated right side of the heart. Pulmonary hypertension (PASP 65). Bronchoscopy was performed with Bronchoalveolar lavage and transbronchial lung biopsies were taken but results were indecisive. Medical Thoracoscopic Lung biopsy with coagulation forceps was performed.

Pathology results revealed

Gross: Biopsy portions 1cmx1cm, tittally submitted.

Microscopic: Examination of specimen received revealed sections in lung tissue fragments show multiple granulomatous lesions formed of mononuclear inflammatory cells together with large multinucleated giant cells engulfing crystalline material, brightly bi-refringent under polarized light (most probably microcrystalline cellulose) located in an interstitial and perivascular distribution and surrounded by dense fibrous reaction. Few blood vessels show mild thickening, areas of interstitial mild fibrosis, mild mononuclear inflammatory infiltration and intra alveolar macrophages are also seen. There are areas of fibrin deposition entangling debris and PNLs. No evidence of malignancy in sections examines, picture compatible with intravenous illicit drug granulomatous lung reaction.

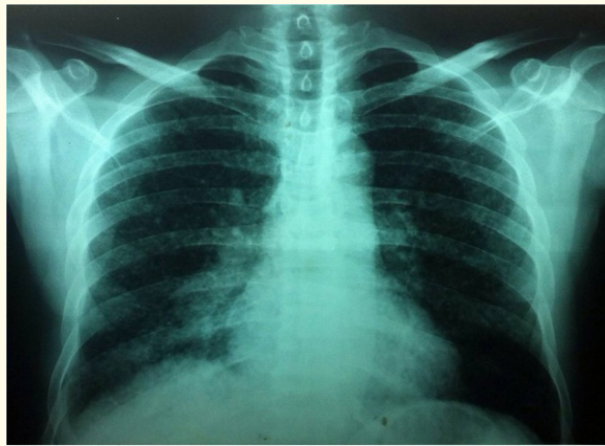


Figure1: Chest x ray.

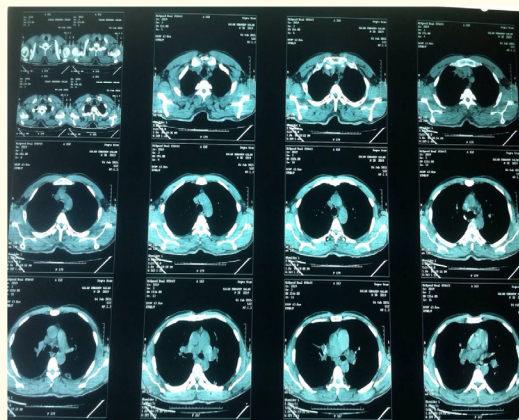


Figure 2a: CT chest (vascular window).

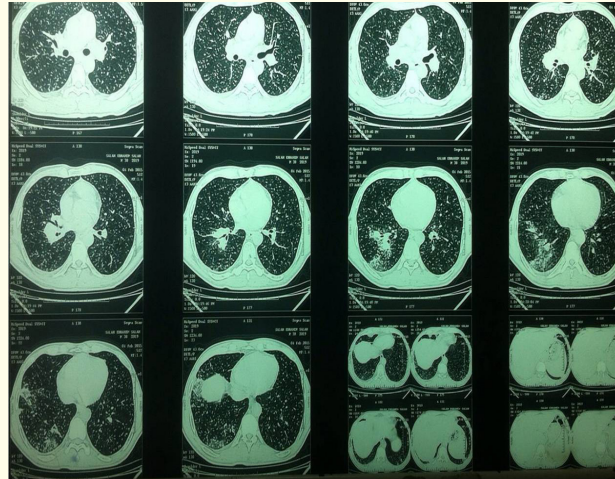


Figure 2b: CT Chest (pulmonary window).

Discussion

Despite encouraging reports in the literature from the 1980s on MTLB in ILD [3,4], most pulmonologists did not use MTLB in the diagnostic work-up of ILD. Many pulmonologists probably still fear the complications of thoracoscopy, while many pathologists still have to become acquainted with the smaller amount of tissue compared to the larger surgical samples. Previous studies on MTLB with diathermy coagulation forceps did not specifically address the issue of biopsy quality. Boutin., *et al.* [2] reported on MTLB in 20 patients with diffuse ILD. Up to eight biopsies were taken and a diagnosis was obtained in all 20. The number of “more readily” made diagnoses such as pneumoconiosis, sarcoidosis or carcinomatous lymphangitis, however, was high (10 of 20).

In our case report, this young man was diagnosed with interstitial lung disease due to a foreign body reaction around cellulose particles. Being an IV drug addict, he used to dissolve the heroin in lemon juice and water before injecting it into his vein. Medical thoracoscopic lung biopsy clearly helped us to diagnose his condition.

Conclusion

Based on this and other series, MTLB can be an interesting second choice for interventional pulmonologists in a variety of ILD if TBB or BAL has failed to provide a diagnosis. The technique has some advantages over a surgical biopsy, which can be reserved as the final step in many instances. The possibility to take several biopsies from different sites under visual guidance and the lower morbidity are the most important advantages. A prolonged air-leak is to be anticipated in patients with very stiff or honeycombing lungs, where VATS with a stapler or OLB with a suture may be a reasonable alternative [5].

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