

APICAL PLEUROPULMONARY CHANGES IN PERSONS EXPOSED TO ASBESTOS—EXPERIENCE FROM 40 PATIENTS

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INTRODUCTION

Parenchymal changes due to asbestos exposure are classically situated in the lower lobes. Pleural plaques and diffuse pleural thickening are also found mainly in the lower or the mid zones of the lungs. However, there have also been reports on asbestos exposure leading to upper lobe changes.¹⁻³

MATERIAL AND METHODS

Inclusion criteria and patients. Up to the end of 1986, about 1,600 patients with bilateral pleural and/or parenchymal changes due to exposure to asbestos on chest roentgenogram had been collected at the Department of Lung Medicine of Uppsala University. Among these 1,600 patients, there were 40 who showed an apical pleural thickening at least 5 mm thick on one side or both.

All patients have been followed until the end of 1987.

The mean age at the first sign of apical affection was 60 years; the youngest was 31 years old and the oldest 78 years. The mean latency time from the first exposure to the development of apical changes was 32 years, with a minimum of 5 years and a maximum of 51 years. Twenty-one patients showed apical changes only on the right side, four on the left side only and 15 on both sides. In all patients observed for more than five years there was an obvious progression of the apical lesions.

In five patients, CT was performed. In those patients it was seen that the lesions were mainly pleural but were causing compression of the lung parenchyma, and that some fibrous strands were reaching into the lung from the thickened pleura.

All patients had other asbestos-related pleural changes in the lungs on both sides, bilateral changes being a prerequisite for inclusion to the group in the first place. There was usually thickening around the whole lung, with a marked increase apically. In five patients a benign asbestos pleural effusion had been diagnosed before the apical lesions became evident.

In eight patients bronchoscopy was performed and culture for tuberculosis was negative. Five patients had a course of tuberculosis treatment because of a positive tuberculin test and suspicion of tuberculosis based on the radiological findings. This treatment did not affect the progression of the disease. A tuberculin test was performed in 25 patients and was negative in 12 of them, but in the rest it was positive, sometimes strongly so, the strongest reactor being 30 mm (2 tuberculin units).

Complete lung function test results were available in 21 patients. The vital capacity was affected in all cases. On an average it was reduced to 62 percent of the predicted. The total lung capacity was also decreased in all patients and in the mean 68 percent remained of the predicted value.

Upper lobe changes are a fairly rare manifestation of exposure to asbestos as judged from the paucity of reports in the literature.¹⁻³ There are a number of diseases which manifest themselves at the pulmonary apices. An unspecific fibrotic reaction is common in elderly persons but never reaches the sizes observed in the patients presented here. Many of these patients would previously have been diagnosed as suffering from tuberculosis. It is important to be aware of this manifestation of asbestos, mainly for clinical reasons, to avoid confusion with tuberculosis, but also for compensation purposes.

How specific is this type of lesion for exposure to asbestos? Our experience indicates that similar reactions are very rare in persons who are not exposed to asbestos. As mentioned, there are other diseases which can cause lesions of the upper lobe, but the typical primary thickening of the pleura with compression secondarily of the lung parenchyma is not seen with other diseases or is at least very rare. The lung department is the only one in the county and any lung changes of this type would very likely be referred to us for evaluation. They would also have been discovered at the general health survey, which was in practice in the county until fairly recently. Thus, the lesion seems to be as pathognomonic to asbestos as are pleural plaques.

Why does this lesion occur in some patients and not in others? It does not seem to be due to the degree of exposure. This seems to depend on individual factors, and my personal belief is that some disturbance of the immune system caused by asbestos is responsible for it.

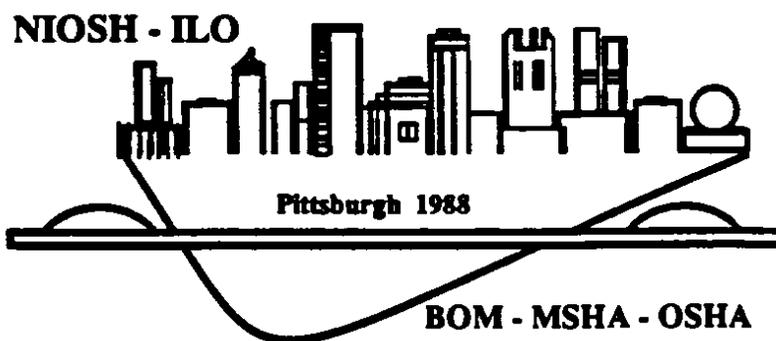
Apical pleural thickening due to exposure to asbestos is usually only a part of a general reaction, and other parts of the same lung and usually also the other lung are also involved. The tendency to progression will, with time, in many patients cause a serious deterioration of lung function. The patients should be followed with chest roentgenogram and lung function regularly.

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