

ROUGH TRANSLATION

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PNEUMOCONIOSIS AND PVC

Paper to be published soon by P Lazard, G Guigou, C Capo, P Pammier de Santi and J Berrod

Mr S A aged 53 years was admitted to hospital on 26 March 1978 in the care of Dr Guigou, lung specialist (pneumophthisiologue?) in the Digne Hospital (Haute-Provence Alps) with symptoms of moderate dyspnoea, diffuse chest pains and a slight fever of 38° which had persisted for a few days.

In this man's recent history (he was a shepherd by profession), an acute pulmonary episode in August 1974 was noted but this was cured rapidly by a short course of antibiotics.

He was also a long established smoker who consumed 20/30 gm of tobacco per day.

There was no pathological history. The clinical examination was negative, tuberculin test positive and various biological examinations were within normal limits. The BK test was negative. Chest X-rays showed a clear but diffuse (?) reticulo-nodular image (see photo).

Questioning of the patient drew attention to previous occupations. Mr S A worked for 23 years in a chemical factory. In these years, he was almost continuously employed in a VCM polymerisation unit and more especially in a workplace which had risks of exposure to powders. He left this employment to work as a shepherd for 7 years before he entered hospital.

Since no precise aetiology could be obtained, MS was sent for examination to Prof Charpin at the St Marguerite Hospital in Marseilles.

Because of the occupation of the invalid at the time, research was done on serum precipitins by immunoelectrophoresis and by the immuno-chemical precipitation methods of Outcherlony. The results sent from the Laboratory of Professor Molina to Clermont-Ferrand led to the discarding of the diagnosis of farmer's lung.

The liaison established with the factory doctor which had previously employed MS allowed the retrieval from the systematic 1967 and 1968 x-ray examination of reticulo-nodular patches similar to those of 1975. Earlier x-ray photographs were normal.

A lung puncture biopsy by Steel's pneumatic instrument was carried out; the section was examined both by optical and electron microscopes. The sections were further entrusted to Professor Payan's Laboratory. In the optical microscope one could see a diffuse infiltration with histiocytes and multi-nuclear giant cells with some collagen formation.

The electron microscope study shows foreign particles in the macrophages. These particles are very like particles of PVC seen in the electron microscope and are not coloured by the usual methods.

These same particles of PVC have been put in contact with human alveolar macrophages obtained by bronchial lavage. The examination by electron microscope of these macrophages shows the rapid appearance of the PVC particles in the phagosomes (slides).

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The Works Medical Officers of the VCM polymerisation factories who were consulted have not noticed lung pictures of this type among their employees. X-ray examinations are done regularly of all workers exposed to the VCM and PVC risk in these factories.

In addition it should be noted that the working conditions have changed greatly, that around 10 persons in total have been exposed in the same manner as Mr SA without having given any abnormal lung pictures and that the emulsion product is particularly finely divided.

Finally, consideration of the functional symptoms and the small perturbations in lung function tests leads one to think that the amount of fibrosis is very limited and difficult to dissociate from the use of tobacco. It would seem therefore a question of an additional burden.

Be that as it may, it appears that x-ray examination of employees exposed in this way must be systematically pursued, more especially in the case of employees exposed to fine PVC dust and this must be done in association with lung function tests.

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