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Prevalence of Pleural Calcification in Persons Exposed to Asbestos Dust, and in the General Population in the Same District

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It is of interest whether pleural calcification is primarily the result of long years of exposure to asbestos dust or whether there are factors other than exposure to dust. We have investigated persons working for a long period in a plant processing asbestos products (chrysotile), persons without occupational exposure to dust but living in the vicinity of the plant, and consanguineous relations of patients with pleural calcifications. We have also studied a large population above the age of 40, in the district in which the plant is situated. Comparison of the groups disclosed that prevalence of pleural calcifications was closely related to opportunity for exposure to asbestos dust either occupationally or by family or neighborhood contact, as contrasted with the unexposed population. The prevalence in the group with direct or indirect asbestos exposure was 5.3, 5.8, 3.5%; whereas in the unexposed population it was 0.34%. These results indicate that asbestos is primarily responsible for pleural findings, but that some pleural disease may be the result of the other factors, still not known. The identification of other causes is hampered by the long period which need elapse from the onset of the process to the radiological appearance of the pleural change.

Soon after the demonstration of the fibrogenic properties of asbestos clinical evidence appeared demonstrating pleural changes in persons with long work exposure in asbestos mines or factories. The unusual finding of pleural calcification was attributed, in the fifties, solely to the effect of asbestos [Cartier (4), Lynch and Cannon (12)]. Later, when unexplained findings of the same character were made in the populations not known to be exposed to asbestos, the etiology seemed less certain [Jacob and Bohlig (9); Anspach (1); Anspach, Roitzsch, and Clauswitzer (2); Bohlig (3)].

Epidemiological studies of populations designed to investigate possible exposures to asbestos dust led in the sixties and later to sharp differentiation of both points of view. In the first instance, are Finnish, Canadian, American and other investigators who believe that occupational or nonoccupational exposure to asbestos provide the background for pleural findings [Kivilluoto (10, 11); Raunio (16); Cartier (5); Selikoff (19); Zolov, Bourilkov, and Babaljov (21); Rubino, Concina, and Scansetti (18)]. In the second group are authors who describe regional concentrations of pleural calcification with no evident contact with asbestos and who, for this reason, reject an asbestos etiology. Prominent in this second group are Czechoslovak workers [Hromek (8); Marsová (15);

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