

SOME RECENT PUBLICATIONS ON

ASBESTOS AND ASBESTOSIS



"Asbestos Exposure During Naval Vessel Overhaul", William T. Marr (Medical Department, Long Beach Naval Shipyard), AIHA Journal, May-June 1964, page 264.

A study among insulation workers in a shipyard has revealed several men on disability compensation and one death due to asbestosis. Exposures occur during the fabrication and installation of asbestos insulation and during removal of insulation for repair or overhaul of ships. X-ray examinations are not adequate for control as cases usually take a minimum of seven years to develop.

"Asbestosis and Lung Cancer", W. J. Williams, M.D., Path., Cardiff, Wales, AMA Archives of Environmental Health, January 1965, page 44.

This report records 52 American cases of asbestosis among whom there were ten patients with malignant tumors, an incidence similar to that reported in Britain.

"Studies of Hydrocarbons on Mineral Dusts", Harington and Smith, AMA Archives of Environmental Health, March 1964, page 453.

Chrysotile asbestos adsorbed 100 percent 3:4-benzpyrene from solutions after 48 hours at 37°C compared with 40 percent and 47 percent for crocidolite and coal, respectively, and 10 percent for amosite. No correlation was found between the degree of adsorption of 3:4-benzpyrene and the extent to which it was eluted by serum.

Serum eluted the naturally occurring oils more effectively from coal dust than it did from crocidolite fiber and was slightly more effective than cyclohexane in eluting 3:4-benzpyrene from coal and crocidolite.

3:4-benzpyrene was eluted more easily from "natural" coal and crocidolite than it was after it had been freshly adsorbed on dusts previously freed of their naturally associated hydrocarbons.

These findings are discussed in relation to the pathogenesis of coal workers pneumoconiosis and asbestos malignancy.

"Non-Occupational Diffuse Pulmonary Fibrosis: A Report of a Case in an Asbestos Worker, Cartier, M.D., Thetford Mines, Quebec and Gross, M.D., Pittsburgh, Pennsylvania, AMA Archives of Environmental Health ., January 1962, page 73.

A case of non-occupational, diffuse, chronic interstitial

pulmonary fibrosis is reported in a worker exposed to asbestos dust for 38 years. Whereas the chronic interstitial pneumonitis appeared to have its inception about 32 years prior to death and resulted in depletion of the pulmonary reserve, it was superimposed patchy bronchopneumonia which, causing severe dyspnea and cyanosis, was the immediate cause of death.

This case illustrates the hazard of making clinical diagnosis of pneumoconiosis on purely presumptive evidence. A clinical diagnosis of pneumoconiosis, to be sound, must be based on: (a) knowledge of significant exposure to dust of respirable particle size and (b) knowledge of the clinical as well as the radiological evolution of the pulmonary disease.

"Asbestosis in a Worker Engaged in Automobile Undercoating", Brugsch & Bavely, New England Journal of Medicine, August 24, 1961, 265: 379-381.

A case of asbestosis in an occupation hitherto not connected to asbestos is presented. This concerns an individual engaged in automobile undercoating. The diagnosis was confirmed by biopsies of the lung obtained at thoracotomy which revealed a foreign-body reaction, asbestos fibers, and a marked connective tissue reaction. The worker had applied an asbestos-base undercoating on new cars over a period of 6 years by means of a hand-type spray gun. No mechanical ventilation or respiratory protective devices were in use during this operation.

"Asbestosis and Carcinoma of the Lung: A Case Report and Review of the Literature", Anderson, M.D. and Campagna, M.D., AMA Archives of Environmental Health, July 1961, page 27.

A case of asbestosis associated with carcinoma of the lung is presented. The literature is reviewed, and this is the twenty-fourth reported case, with complete autopsy findings. In general it conforms to the previously described cases where a relationship between the two diseases is intimated.

It is suggested that further cases of asbestosis, with and without neoplasia, be reported with careful attention to other factors, such as smoking. Only when these facts are available will final assessment of the relationship between asbestosis and lung carcinoma be possible. (There follows twenty references dated from 1943 to 1954.)

"Asbestosis in Experimental Animals", Wagner, British Journal of Industrial Medicine, January 1963, page 1.

Previous animal experiments with asbestos dusts have been almost entirely confined to chrysotile asbestos. It was, therefore, decided to investigate the effects of mill dusts from the three types of asbestos that are produced commercially in South Africa; namely, chrysotile, amosite and crocidolite. Chrysotile and amosite samples were relatively pure, while in contrast the

crocidolite dust was found to consist mainly of ironstone and silica and contained less than 10 percent of asbestos fiber.

Guinea pigs, Vervet monkeys and rabbits were exposed to these dusts. The results were assessed on histological criteria. It was found that in all three species of animals, the amosite dust produced more marked lesions than the chrysotile and that these lesions occurred at an earlier period.

It was not possible to compare these lesions with those caused by the crocidolite dust, owing to its impure nature. It was noted, however, that this dust caused severe lesions in guinea pigs and monkeys and that the animals in this group succumbed more readily to respiratory infections.

"Peritoneal Tumors in Asbestosis", Enticknap and Smither, British Journal of Industrial Medicine, January 1964, page 20.

Eleven cases of diffuse abdominal tumors in association with exposure to asbestos were discovered in the years 1958 to 1963. There were eight men and three women, all of whom had worked in the same factory. In seven of the men the age at death ranged from 38 to 78 years; one man is still alive at the age of 46. The women died at 44, 61 and 67. The survival time after the first exposure varied from 20 to 46 years. The shortest period of exposure was 10 months and the longest, 32 years. All three of the main commercial types of asbestos had been involved in their working operations. Histological confirmation of the nature of the tumor has been obtained at necropsy in nine of the ten deceased and at biopsy in six, including the survivor. A remarkable feature of these cases is the minimal fibrosis found in the lungs. In three men and one woman, asbestosis was not diagnosed during life and no patient was completely disabled by pulmonary fibrosis.

"A Follow-up Study of Workers from an Asbestos Factory", Elwood and Cochrane, British Journal of Industrial Medicine, October 1964, page 304.

Associations between exposure to asbestos and carcinoma of the lung, diffuse mesothelioma of the pleura, and diffuse abdominal tumors have been demonstrated. Only by an epidemiological approach can the total risks of an exposure to asbestos be estimated and such a study is reported here. This suggests that white asbestos (chrysotile) may not be a serious hazard as far as mesothelioma or abdominal tumors are concerned, though there is some evidence of an excess in the number of deaths from carcinoma of the lung and bronchus.

"Mesothelioma of Pleura and Peritoneum Following Exposure to Asbestos in the London Area", Newhouse and Thompson, British Journal of Industrial Medicine, October 1965, page 261.

A series of 83 patients from the London Hospital with a diagnosis

of mesothelioma confirmed by necropsy or biopsy has been studied for possible exposure to asbestos. The series consisted of 41 men and 42 women; 27 of the patients had peritoneal, and 56, pleural tumors. The earliest death recorded was in 1917, but only 10 of the series died before 1950 and 40 between 1960 and 1964. In 76 of the series full occupational and residential histories were obtained. Forty gave a history of occupational or domestic (living in the same house as an asbestos worker) exposure to asbestos compared with 9 out of 76 patients from the same hospital suffering from other diseases. None of the 17 suspected cases of mesothelioma, rejected on pathological grounds, was found to have had any exposure to asbestos. There was also evidence that neighborhood exposures may be important. Among those with no occupational or domestic exposures, 30.6 percent of the mesothelioma patients and 7.6 percent of the inpatients with other diseases lived within half a mile of an asbestos factory.

Out of 31 patients with occupational exposures only 10 were in jobs scheduled under the Asbestos Regulations of 1931. The interval between first exposure and the development of the terminal illness of mesothelioma ranged between 16 and 55 years.

In 47 patients in the mesothelioma series lung tissue or sputum was available for examination. In 30, either asbestosis or asbestos bodies were present.

"Asbestos Exposure and Neoplasia", Selikoff, M.D., Churg, M.D., and Hammond, D.Sc., Journal of the American Medical Association, April 6, 1964, page 142.

Building trades insulation workers have relatively light, intermittent exposure to asbestos. Of 632 insulation workers, who entered the trade before 1943 and were traced through 1962, 45 died of cancer of the lung or pleura, whereas only 6.6 such deaths were expected. Three of the pleural tumors were mesotheliomas; there was also one peritoneal mesothelioma. Four mesotheliomas in a total of 255 deaths is an exceedingly high incidence for such a rare tumor. In addition, an unexpectedly large number of men died of cancer of the stomach, colon or rectum (29 compared with 9.4 expected). Other cancers were not increased: 20.5 were expected, 21 occurred. Twelve men died of asbestosis.

"Asbestos Bodies in Human Lungs at Autopsy", Cauna, M.D., Totten, M.D., and Gross, M.D., Journal of the American Medical Association, May 3, 1965, page 111.

The incidence of asbestos bodies in the lungs was investigated in 100 autopsies of adults. Lung smears were taken from the sectional surfaces of the upper and lower lobes of both lungs. The slides were dried and mounted without staining, and approximately 400 low-power fields were examined in each slide. Routine histological sections of unexpanded lungs were also examined in

all cases. Asbestos bodies were found in 41 percent of the subjects. They were not encountered in persons up to 24 years of age.

Among the males, the incidence was 47 percent and in females, 34 percent. Although significant microscopic pulmonary fibrosis was encountered in two positive cases, no instance of classical asbestosis was found. Mesothelioma of the pleura was not encountered. Primary lung carcinoma occurred in one patient with asbestos bodies and in one without.

WMcN:lp