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SATURDAY, AUGUST 13, 1949

ASBESTOSIS AND CANCER OF THE LUNG

Until recently the coexistence of asbestosis and can- of the lung was considered by many investigators .. coincidence. Since 1935, 23 such cases were recorded by American, English and German physicians. Wedler [1] noted 14 cases of asbestosis cancer in a series of 92 necropsies on patients with asbestosis, or about 15 per cent of cancer of the lung in persons who died from this industrial disease. The exposure time ranged from 3 to 27 years (average 15 years). The ages in 17 cases were 35 to 75 years (average 50 years). Until now the question of a causal relation between asbestosis and cancer of the lung has been an open one. The recently published Annual Report of the Chief Inspector of Factories in England for 1947 provides additional data on the actual existence of such interrelations.[2] During 23 years, 1924 to 1946 inclusive, 235 deaths, either caused by asbestosis or in which asbestosis had been established at necropsy, were reported to the Chief Inspector. Cancer of the lungs or pleura was found in 31 of these cases (13.2 per cent). Of the 128 male deaths in this group 22 (17.2 per cent) were complicated by cancer of the lung, while of the 107 female deaths 9 (8.4 per cent) were ilarly affected. The mean age at death from asbestosis complicated by cancer of the lung was 52.1 years. A causal relation between asbestosis and cancer of the lung is supported by the following observations: The incidence rate of cancer of the lung in this group is excessive, since the normal death rate from cancer of the lung among adults examined at necropsy present is about 1 per cent of all necropsies. Moreov there is a distinct shift in the sex distribution of can of the lung in the series of asbestosis cancers repor from England. The male-female sex ratio is 2.4 while it is 5:1 for cancers of the lung in gene This shift indicates that an environmental and dently occupational carcinogen was active in the ast tosis group, tending to equalize the incidence rate cancer of the lung for both sexes. Recent experimer observations support this interpretation of clinical dence. Nordmann and Sorge [3] exposed mice to inh tion of asbestos dust and found that in 20 per of the surviving animals there developed squamous cancer originating from the bronchial mucosa, w other types of epithelial proliferation were presen 42 to 57 per cent of these animals, in addition to dif or nodular fibrosis of the lung. The histologic chara of the cancers (squamous cell cancer instead of ad carcinoma seen in the spontaneous cancer of the l of mice) and the histogenetic derivation of the tun (bronchial mucosa instead of alveolar epithelium of spontaneous type) indicate that a specific factor exogenous origin, represented by the inhaled asbe dust, was responsible for the bronchial cancers obser

Since some 20,000 workers are employed in the as tos-producing industries of this country and Ca and many additional thousands in various asbe consuming industries, increased attention to this p able occupational hazard of cancer of the lung by medical profession is desirable. Cytologic examinat of the bronchial secretion may well be included in periodic examination of workers exposed to asb dust whenever clinical or roentgenologic evidence cates the possible existence of a pulmonary ca As the available evidence shows that the occurr of cancer of the lung is related to pulmonary asbes and is not merely a possible sequela of exposur asbestos dust, in all fatal cases of asbestosis t should be postmortem examination with detailed h logic analysis. The anatomic lesions produced asbestos dust in the lungs make difficult at times tinction by clinical and roentgenologic diagn methods between changes of pneumoconiotic nature those that might indicate a cancerous growth.

1. Wedler, H. W.: Asbestose an Lungenkrebs. Deutsche med. schr. 69: 575, 1943.

2. Extract from Annual Report of the Chief Inspector of Factor the Year 1947: Medical Section, London, His Majesty's Sta Office, 1947, pp. 15-17.

3. Nordmann, M., and Sorge, A.: Lungenkrebs durch Asbestst Tierversuch, Ztschr. f. Krebsforsch. 51:168, 1941.