

Mesothelioma without Exposure to Asbestos in Thailand

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Diseases reported to be associated with asbestos exposure include asbestosis, lung cancer, pleural plaques, pleural effusion and mesothelioma. In the case of mesothelioma, it was considered by most in the past to be a fatal cancer and exclusively a marker or signal disease for airborne exposure to asbestos, with a high relationship to the occupational environ-

ment. Recently, however, a number of reports from abroad have suggested that other exposure agents appear to be causative for this disease along with its idiopathic form (Table 1).⁽¹⁾ Our experience in Thailand may likewise support this notion.⁽²⁾ Worthy of note is that asbestos was imported for industrial use in Thailand for the first time in 1975;⁽³⁾ that was al-

Table 1 Agent, other than asbestos, reported to be the cause of mesothelioma⁽¹⁾

Agent	Reference
Naturally occurring agents ¹	Wagner et al., 1985; Dogan, 2003
Ionizing radiation	Lerman et al., 1991
Sugarcane	Das et al., 1976
Pleural scars	Hillerdal and Berg, 1985; Hubbard, 1997
Familial/genetic	Risberg et al., 1980
Spontaneous	Fraire et al., 1988
Infectious agents ²	Cristaudo et al., 2005
Dietary factors	Huncharek, 2002
Man-made mineral fibers	Health Effects Institute–Asbestos Research, 1991
Metals ³	Ilgren and Wagner, 1991
Chemicals ⁴	National Toxicology Program–NTP, 2000
Synthetic agents ⁵	Ilgren and Wagner, 1991
Polymers ⁶	Ilgren and Wagner, 1991
Hydrocarbons ⁷	Ilgren and Wagner, 1991
Hormones ⁸	Ilgren and Wagner, 1991
Inflammation ⁹	Ilgren and Wagner, 1991
Smoking	Hirao et al., 2002

Note: 1 – erionite 2 – like Simian Virus 40-SV 40 3 – beryllium 4 – o-nitrotoluene 5 – glass dust
6 – polyurethane 7 – benzo[a] pyrene 8 – stilbesterol 9 – recurrent pneumothorax

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most seven years after Thailand's first reported case of pleural mesothelioma in 1968⁽⁴⁾ with three subsequent cases in the pre-industrial era.⁽⁵⁻⁷⁾ Thereafter, there were other reported cases, i.e. 13 cases from Siriraj Hospital, seven cases from Ramathibodi Hospital, four cases each from Chiang Mai University Hospital and Chulalongkorn Hospital, one case each from Dhonburi Hospital, Vajira Hospital, Rajvithi Hospital, and Phramonkutklou Hospitals;⁽⁸⁻¹²⁾ therefore, the total number of known cases in the period 1968-1981 reached 36, with over half of them being residents of the northern part of the country.⁽¹⁰⁾ Among the 32 cases with available information, 36.4 per cent were farmers, 21.2 per cent houseworkers, 15.1 per cent laborers, 12.1 per cent merchants, 9.1 per cent government officials and 6.1 per cent students. The prevalence rate of mesothelioma in Thailand during that 25-year period was estimated to be 0.07/million/year.⁽¹³⁾ However, to everyone's surprise, there has been no report of such cases in the literature since then, despite the finding of asbestos bodies in 109 lungs among 330 autopsies in the period 1983-1985 where analytic electron microscopy of five random specimens revealed chrysotile in three cases and amphibole in two cases. All the positive cases had no relation to an occupation involving asbestos exposure and none had an asbestos-related lung condition; most of the positive cases were residents of Bangkok and the youngest subject with asbestos bodies was a five-month-old girl.^(15,16) Attempts to identify asbestos air pollution in the atmosphere near roads with heavy traffic in Bangkok yielded a negative result.⁽¹⁷⁾

In 1977, Banyat Prijyanonda et al.⁽¹⁸⁾ reported the case of 37-year-old man who worked for six years in a factory producing body powder; he developed nodular lesions in both lungs, and the diagnosis based on a lung biopsy was pulmonary talcosis. Asbestos bodies found in the lung specimen were likely to have

come from talcum powder that had been contaminated with asbestos. More recently, Malee Pongpanich of the Department of Disease Control, Ministry of Public Health, reported finding asbestos fibers in talcum cosmetic powders.⁽¹⁹⁾

At this point, the author of this communication is obliged to conclude that not a single established case of mesothelioma in Thailand, including the case in the recent report,⁽²⁰⁾ was eligible to be accepted as a probable case caused by airborne asbestos exposure, either occupationally or environmentally. There is one famous report which stipulated that a number of mesothelioma cases developed spontaneously without any history of exposure to suspect causative agents.⁽²¹⁾

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