area is greatly increased, augmenting the leaching process (air-milling of the fibers increases the surface area from 4 sq m/gm to almost 60 sq m/gm).[32]

There are other good reasons why the large fibers which we inevitably choose by optical microscopy will tend not to be unaltered (or even, in many instances, altered) chrysotile. The optical microscope delivers a select, biased population. First, we can only study what the microscope sees—and it only sees large fibers, those thicker than 0.5μ in diameter. Chrysotile, it has been noted, tends to split into finer fibrils in biological environments, and degradation to smaller particles occurs. Amphiboles (anthophyllite, tremolite, amosite, crocidolite) resist such physical and chemical attack. Therefore, selection of large asbestos bodies by means of light microscopy, resulting in a biased population of larger particles which were not altered in biological residence, stacks the analytical deck.

These considerations indicate that study of asbestos bodies need tell us little about the chrysotile content of human lungs. Rather, if we want to know whether chrysotile is present in lungs, we should look for chrysotile. In a sense, the wrong question has perhaps been asked; instead of "What is the nature of the core of the asbestos body?", it seems more profitable and more direct to ask the question, "Is chrysotile asbestos present in the lungs of urban dwellers?"

The answer to the latter question is unequivocally "yes." Data presented here demonstrate that this is so in New York city. Similar EM observations have been recorded in London, where Pooley et al[33] have not only found chrysotile asbestos in almost 80% of their cases, but noted it to be the most common and most abundant of all fibers detected. We anticipate that what is now known for New York and London will be found in other cities as well.

Conclusions

In 28 consecutive cases of urban dwellers who died in New York city, electron microscopy showed chrysotile asbestos to be present in all examined (28 of 28). Of these, possibly four of 28 may have been made "positive" by the occurrence of background fibril contamination. It is noteworthy that asbestos bodies were found in three of four of these "negative" cases.

Chrysotile asbestos often occurred in association with other substances, including platy particles (clay or talc), fibrous glass, and, occasionally, diatoms.

The question has been put forward: Is chrysotile asbestos present in the lungs of urban dwellers at this time? Our data demonstrate that the answer is unequivocally "yes" in New York city. Similar observations have been made in London. We anticipate that what is now known in these two cities will be found in other urban areas as well.

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