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COMMENT

A Case of Fulminant "Talc Pneumoconiosis": Where is the Smoking Gun?

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We refer to the case presented by Yoram Dekel and colleagues in the Vol. 10, No. 4 issue of the Journal,¹ which sets out *prima facie* evidence of talc inhalation from "excessive cosmetic use of talc" as prime suspect in a 42-year old woman's demise. We would plead that the proximal cause of death is far from established.

The rapid progression of pancardiac failure in a patient with a recent onset of pulmonary hypertension and cor pulmonale is unconvincing. Documented pulmonary hypertension is attributed to interstitial fibrosis, but this is not backed up by X-ray findings. Neither left heart function before the final crisis nor systemic blood pressure are reported and, despite a normal left ventricular scan, left heart hypertrophy was found at autopsy. Cardiac enzymology is omitted. This leaves the interpretation of acute cardiomyopathy either of dilatory or viral etiology undecided.

The crystals found at microscopy are actually compatible with other sheet silicates apart from talc.² "Talc particles were exceedingly large and not of the usual granular configuration" but cosmetic-grade talc is highly purified. It is significant that aluminium was found as this element distinguishes talc from the aluminium silicate pyrophyllite [$Al_2(Si_4O_{10})(OH)_2$], which is similar to most talcs [$Mg_3(Si_2O_5)_2(OH)_2$], is used in the construction and automobile industries and causes pyrophyllitosis.³ Both minerals have the same hardness and specific mass volume ($2.6\text{--}2.9\text{ g/cm}^3$).² The "elemental analysis" (Figure 5) does not clearly indicate if peaks refer to quantities or energy states, and which method of spectrometry was used⁴ to identify talc from related phyllosilicate particulates. Cement inhalation, e.g., would be hard to rule out outside occupational settings without the use of spectrometry.⁵ As other environmental exposures cannot be totally excluded from the scant description of the case (an estimate of the quantity of particulate matter found is not reported), most of the evidence against cosmetic talc, without "scene of crime" sampling, remains circumstantial.

Talc pneumoconiosis is an uncommon form of lung dust disease. In the mining or milling industries, it occurs after inhalation of high concentrations of the dust.^{6,7} At very low concentrations, talc is unavoidable in everyday life. According to the US Geological Survey,⁸ apart from applications in body powders or cosmetics, talc is extensively used in asphalt, auto body putty, belts, catalytic converters, ceramics, flooring, foam packaging, gaskets, hoses, joint compounds, paint, paper, plastics, roofing, rubber, sealants, wire and cable insulation. It is also found in sweets, chewing gum, pharmaceuticals, agricultural chemicals, insecticide carriers and animal feed. In these applications, talc is certainly in a less purified state than in the cosmetic industry. It can carry minerals of the asbestos group as impurities that have fibrogenic properties.

Thus, more methodological and clinical evidence ought to be brought forward before talc can be clearly pointed out as the smoking gun in the case. While cautionary rules apply when using mineral substances (including water), the same caution should be exercised in generalizing hazards. Thus, the blanket warning that "generally talc inhalation results in lung disease" may be unduly alarmist.

References

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