

PATHOLOGY CONSULTATION ELECTRON MICROSCOPY REPORT

(Medicare Provider #CL0631)



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Date: April 27, 2000

PATIENT'S NAME: CAVANAUGH, Fred P., Jr.

AGE: 70

SEX: Male

REFERRING PHYSICIAN: Philip Cagle, M.D.

Attorney: John Kurowski
Kurowski & Bailey

CLINICAL DIAGNOSIS: Probable mesothelioma

MATERIAL RECEIVED: Autopsy, 0.5 gm tissue in formalin

PROCEDURE: **SECONDARY & BACKSCATTER ELECTRON IMAGING AND ENERGY
DISPERSIVE X-RAY ELEMENTAL ANALYSIS (EDXEA)**

Primary fixative:	Formalin
Secondary fixative:	none
Embedment:	none
Deparaffinization:	not needed

The specimen (0.5 gm tissue) was blotted dry, dissolved in filtered household bleach and passed through a 13 mm Millipore Type HTTP filter (pore size: 0.4 μ m). The filter was washed extensively with water and dried. The mineral residue was examined by secondary and backscattered electron imaging. Twenty individual fibrous particles morphologically compatible with ferruginous bodies or naked asbestos fibers were analyzed by EDXEA for elemental content. Areas of the substrate immediately adjacent to each fiber were probed using the same parameters. The resulting off-fiber spectra were subtracted from the spectra of the corresponding fibers to yield composition of the fiber independent of the substrate.

PERTINENT FINDINGS: Of the 20 fibers analyzed, 13 yield spectra most consistent with amosite asbestos, 3 yield spectra most consistent with anthophyllite asbestos, and 1 yields a spectrum most consistent with tremolite asbestos. The other 3 fibers yield spectra indistinguishable between amosite and crocidolite asbestos.

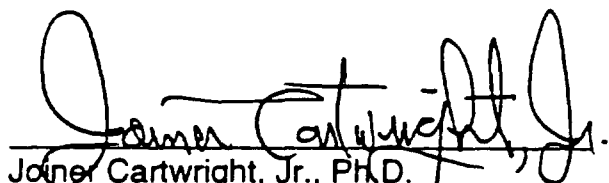


COMMENT:

The analytical procedure used detects only those elements with atomic numbers greater than 10. Elements not detected include lithium, beryllium, and boron. The small amounts of the elements, potassium, sodium, and sulfur, that may appear may represent residual salts in the tissue. The results of the procedure are semi-quantitative and do not reflect oxidation states or stoichiometric relationships among the elements.

The identification of crocidolite depends on the detection of the small amount of sodium intrinsic to the fiber. However to be certain that the sodium seen is from the fiber and not residual from the bleach digestion, all of the bleach must be washed out of the specimen as evidenced by the total absence of chlorine in the spectrum. It is sometimes impossible to remove all of the bleach from a given sample, even after thorough washing. It is also possible that chlorine salts intrinsic to the tissue but not the fiber remain in the sample. In the presence of chlorine, the positive identification of crocidolite cannot be made.

E.M. INTERPRETATION: The specimen analyzed contains amosite, anthophyllite, tremolite asbestos. The presence of crocidolite asbestos is not ruled out (See comment above).


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