Diagnosis of Asbestos-related Disease

Reasonable and effective public policy regarding the asbestos-related diseases should be based on sound scientific and medical knowledge. The categories of these policy issues are: 1) estimation of risks, which may not be measurable at current levels of exposure but which could lead to disease if exposures are not sufficiently controlled, and 2) adequate and equitable compensation of workers who have been injured by past exposures to asbestos in the workplace.

The first requires a data base derived from epidemiologic studies of populations exposed to asbestos for whom valid quantitative health and exposure information is available. Resulting exposure-response relationships can lead to the setting of protective occupational standards and the appropriate allocation of resources to maximize health benefit when competing risks are presented to policy-makers for amelioration.

The second issue can only be sensibly addressed when, as in other areas of medicine, diagnosis is based on generally accepted criteria which are supported by the known pathophysiology of the disease. With the asbestos-induced illnesses, there is no absolute specificity, as it relates to causation, only degrees of nonspecificity. Mesothelial tumors in asbestos-exposed individuals are very likely to be caused by this exposure, in contrast to lung cancer which, even in exposed persons, is more likely the result of smoking. A similar range in the degree of causal specificity is found in the nonmalignant conditions known to result from asbestos exposure.

A joint committee of the ACCP/ATS, chaired by Dr. Raymond H. L. Murphy, was charged with the responsibility of providing a consensus view on diagnostic issues in the group of nonmalignant diseases for which compensation is being sought by thousands of former workers who allege injury due to their asbestos exposure. The resulting statement has recently been published.[1] Because there is often alarming abuse of sound medical principles and distortion of scientific knowledge, frequently perceived or justified as being beneficial to claimants, several points covered in this report will be highlighted. The comments are mine and do not necessarily reflect the views of the committee.

Asbestosis is a term which indicates diffuse lung fibrosis due to asbestos exposure. Its use is not correct in reference to pleural abnormalities. The diagnosis of asbestosis is most often established by one or more clinical or laboratory findings, in conjunction with a history of nontrivial exposure. In fact, this diagnosis will almost always depend primarily on a radiographic appearance compatible with diffuse interstitial infiltrations, in addition to any other abnormalities which may be present on the chest radiograph. While it is rarely necessary, or possible, to examine lung tissue in order to make a diagnosis of asbestosis, when a pathologic diagnosis is made it must be based on the demonstration of both asbestos bodies and fibrosis. Neither alone is sufficient. As in the pathologic diagnosis of other diffuse lung diseases, attention must be paid to adequate size and representativeness of the tissue sample.

As indicated, the chest x-ray film plays a central role in the diagnosis of asbestosis. Improved radiographic technique and quality assurance make possible the sensitive detection, by experienced readers, of asbestosis of even minimal extent. The international classification for the pneumoconioses[2] includes grading of the irregular and linear opacities characteristic of asbestosis. The classification was designed to be used for epidemiologic research and has been helpful in encouraging the training of qualified readers. Indeed, many physicians have taken tests, using standard films, in order to become "certified readers," often for the purpose of establishing credibility when making a radiographic diagnosis of asbestosis (or other pneumoconiosis) in the litigation/compensation arena. There have been undesirable consequences of the use of the ILO Classification for this purpose.

The classification is intended to be descriptive, albeit quantitative. The 12 categories of profusion of small opacities cover the range from normal to marked. It is at the lower categories (0/1 to 1/1) that the greatest degree of interobserver variability (disagreement) occurs. No one category will constitute the lower limit of abnormalities which is "diagnostic" of asbestosis for all qualified readers. For one reader this level will more or less be equivalent to an ILO reading of 1/1 for irregular

Reprinted from CHEST
Vol. 91, p. 802-803, June 1987 Issue

small opacities, for another, 1/0. In the past, categories as high as 2/2 have been suggested.

It is unfortunate that some readers have interpreted the ACCP/ATS statement to suggest that a reading of at least 1/1 for small opacities is required to support a diagnosis of asbestosis. It is more appropriate to consider that level as illustrative of a film compatible with asbestosis. So might also a category 1/0 film; it depends on the reader. Should there be any who think that "mandating" a category sufficient to make a diagnosis of asbestosis will lead to standardization, it should be remembered that any such category can be inappropriately chosen by a given reader, just as now interstitial fibrosis is often "read" on a negative film. Choosing a "diagnostic" category will not, regrettably, suffice to confer credibility on the system.

A physiologic pattern of reduced lung volumes and disturbed gas transfer or the finding of inspiratory crackles are supportive of the diagnosis but are too nonspecific to be helpful in isolation. Clubbing (also nonspecific) is too rare to be useful; dyspnea is almost always present in claimants and can therefore not be a discriminating feature.

The fibrotic process of asbestosis begins in peribronchiolar areas of the lung. Peripheral airways dysfunction has been demonstrated in population studies and the pathologic analog described. However, clinical and epidemiologic evidence is now more than sufficient to firmly conclude that clinically significant chronic airways obstruction is not an expected consequence of asbestos exposure in the absence of far more important causal factors, most notably, smoking.

Pleural thickening, focal (plaques) or diffuse, results from asbestos exposure. Plaques do not affect lung function, and diffuse pleural thickening reduces lung volumes only when it is very extensive. It is still not clear if the presence of benign pleural abnormalities constitutes a risk factor (beyond exposure) for the development of asbestos-related tumors. Whether pleural effects are compensable is, of course, a societal decision. It should, however, be based on accurate information.

Improving the standard of diagnosis in the asbestos-related diseases is important not only because limited public and private resources should go to those with true occupationally-induced injury. As physicians, we have a responsibility to be truthful and humane in our dealings with patients, including those being evaluated for an occupational disease. Both over- and underdiagnosis can be detrimental. Overdiagnosis will evoke needless fear and perceived incapacity in normal individuals—too great a price for possible (usually minimal) economic gain. Underdiagnosis can delay appropriate compensation, increasing the burden of disease on an ill worker and his family. Either premature or delayed diagnosis can, depending on state law, result in loss of any chance for compensation.

Diagnostic standards are needed and achievable, even in occupational disease. Credentialing in the specialties of medicine depends on evaluating candidates on their cognitive knowledge regarding, among other things, diagnostic criteria. Some in the legal community are determined to resist medical standards for diagnosing these diseases, citing the undermining of the tort system (every claimant should have his day in court). They frequently have allies among their medical consultants and witnesses. The large number of claims and lawsuits for asbestosis, and other asbestos-related diseases, makes the need for credible diagnosis even more urgent.

Hans Weill, M.D., F.C.C.P.
New Orleans

Schlieder Foundation Professor of Pulmonary Medicine, Tulane Medical Center.
Reprint requests: Dr. Weill, Tulane Medical Center, 1700 Perdido Street, New Orleans 70112

References

1 Statement of the American Thoracic Society. The diagnosis of nonmalignant diseases related to asbestos. Am Rev Respir Dis 1986; 134:363-68

2 International Labour Office. Guidelines for the use of ILO international classification of radiographs of pneumoconioises, rev ed 1980. Occupational Safety and Health series No 22. Geneva: International Labour Office, 1980