
CORRESPONDENCE

Cigarette smoking and small irregular opacities

Sir,—In his letter (1992;49:453-4) Seaton raises an interesting point and touches on another which merits further discussion.

I strongly support his contention that the International Labour Office (ILO) classification should be used for the *description of radiographic shadows* rather than for *diagnosis*, although when I read the paper by Weiss (1991; 48:841-4) I took him to mean that the shadows that he was reporting fitted into the ILO description, not that he was *diagnosing* pneumoconiosis from them.

Perhaps confusion comes because the ILO classification is often referred to as "the ILO international classification of radiographs of pneumoconiosis." People, therefore, thinking, writing, and talking of them sometimes imply *diagnosis* (of pneumoconiosis) rather than simply a *description* (of shadows) and, conversely, sometimes where the thinker, writer, or speaker does not intend to imply *diagnosis*, his reader or listener might infer that he does.

There is another separate issue. In the final paragraph of his letter, Seaton writes, "in Britain, the diagnosis of pneumoconiosis remains a clinical one." Would that he were right! He goes on to note "the regrettable tendency . . . now present in medicolegal circles in the United Kingdom and . . . spreading also to the overinterpretation of computed tomography scans."

Consider the following:

A patient has worked with asbestos for a number of years. On clinical examination he has no clubbing and no inspiratory crackles. His gas transfer is normal. The chest x ray film shows no parenchymal changes but pleural plaques or bilateral diffuse pleural thickening are seen. His computed tomography scan confirms the pleural changes but shows also, in the parenchyma, some fine linear markings at the bases that are present in both the supine and prone positions. The radiologist, not unnaturally, interprets these as early fibrosis.

Under the social security legislation

in the United Kingdom¹ pneumoconiosis is defined as "fibrosis of the lungs due to silica dust, asbestos dust or other dust. The expression includes the condition of the lungs known as dust-reticulation."

[Note: no minimum extent of fibrosis is stated.]

The standard of proof required in civil law, including social security legislation, is simply the balance of probabilities. It is argued, therefore, that because this former asbestos worker already has evidence of fibrosis in the pleura it is "more likely than not" (as the lawyers express the requirement of civil as opposed to criminal legal proof) that the radiologist is correct and the small linear shadows are due to fibrosis consequent on his exposure to asbestos. From the statutory definition quoted above, the patient, therefore, has pneumoconiosis due to asbestos.

Again, under United Kingdom legislation, where a diagnosis of pneumoconiosis is made, then an award of not less than 1% disability must be made.²

It does not stop there. The present "Special conditions for disablement benefit for pneumoconiosis . . ." provide³ that "where on a claim for disablement pension in respect of pneumoconiosis . . . the disablement is assessed at one percent or more . . ." than disablement pension is payable at least 10%.

Ergo, it seems that an asbestos worker, with some evidence of consequent pleural disease and without conventional evidence of parenchymal disease (asbestosis), but who has parenchymal changes on the computed tomography scan, however slight, may obtain a 10% disability award for pneumoconiosis irrespective of any award for pleural disease.

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- 1 Social Security Act, 1975, Schedule 20. Glossary of Expressions.
- 2 Social Security Act 1975, section 78(3).
- 3 Social Security (Industrial Injuries, etc.) Regulations 1985, regulation 20(1A).

Sex differences in the risk of multiple myeloma associated with agriculture

Sir,—Eriksson and Karlsson (1992; 49:95-103) recently reported a case-

control study of multiple myeloma in which associations with farming and exposure to some pesticides were found. The study contained men and women and presented risk estimates for both sexes combined.

We recently evaluated agricultural factors and the risk of multiple myeloma in a population based case-control study conducted in eastern Nebraska¹ and found surprising sex differences in the results (table). Among men, no increased risk of myeloma was associated with having ever lived or worked on a farm, ever having used insecticides or herbicides, or other agricultural practices. The risk of multiple myeloma was increased over two-fold, however, among women who had ever lived or worked on a farm, and who had ever used insecticides or herbicides on the farm. Nearly every pesticide and pesticide class evaluated was associated with an increased risk of myeloma among women. The number of exposed cases, however, was small and had overlapping exposures, making it impossible to determine whether some specific subset of pesticides was responsible for the apparent associations.

The unexpected sex difference found in this study is difficult to explain. Men, who generally have more direct contact with pesticides on farms than women, experienced lower risks of multiple myeloma. There are no known biological differences in myeloma between the sexes; nor are hormones generally thought to play a part. Plasma cell tumours in mice, however, are stimulated by testosterone² and multiple myeloma rates are higher in men than women.³ The large risks among women may be a chance finding due to the small number of cases or some systematic bias. We evaluated several sources of bias, however, without finding an explanation. Age differences between cases and controls were not responsible. Potential bias from surrogate respondents did not seem to be a factor because results based on data from next of kin were similar to data from self respondents. There were only 11 men and seven women who formed the non-farmer referent categories, and fewer than 10 cases of each sex had personally handled pesticides. With these small numbers, either the deficit among men or excess among women could be due to chance.

Interestingly, the only other study to report risks for both sexes for mul-

Agriculture and multiple myeloma among men and women in eastern Nebraska

Agricultural factor	Men			Women		
	Cases	Controls	OR (95% CI)*	Cases	Controls	OR (95% CI)*
Non-farmers	11	184	1.0	7	235	1.0
Ever lived or worked on a farm	20	539	0.6 (0.2-1.3)	33	471	2.2 (0.9-5.6)
Used insecticides	11	321	0.6 (0.2-1.4)	21	245	2.8 (1.1-7.3)
Used herbicides	8	203	0.6 (0.2-1.7)	10	149	2.3 (0.8-7.0)

*OR (95% CI) = Odds ratio (95% confidence interval) adjusted by age.

multiple myeloma associated with employment in agriculture found relative risks of 0.8 for men and 1.7 for women. Men and women employed in agriculture for longer than five years had relative risks of 1.0 and 2.0 respectively.⁴ Also, we recently evaluated the proportionate mortality ratio (PMR) of farmers from 23 American states and found that the risk of multiple myeloma was slightly greater among women (PMR=1.8) than men (PMR=1.2).⁵ This differential was particularly strong (women, PMR=2.6, men, PMR=1.2) in the central United States, which is heavily agricultural. Other relevant published studies of multiple myeloma are restricted to men only or, like those of Eriksson and Karlsson,⁶ present risk estimates for men and women combined. Although the sex difference in our study may reflect chance, the excess risk of multiple myeloma in women deserves further investigation and points out the need to examine disease risks separately for men and women.

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1 Zahm SH, Weisenburger DD, Saal RC, Vaught JB, Babbitt PA, Blair A. Pesticides and multiple myeloma in men and women in Nebraska. In: *Practical applications of health and safety in agriculture*. Chelsea, MI: Lewis Publishers (in press).

2 Hollander VP, Takakura K, Yamada H. Endocrine factors in the pathogenesis

of plasma cell tumors. *Recent Prog Horm Research* 1968;24:81-137.

3 Ries LAG, Hankey BF, Miller BA, Hartman AM, Edwards BK. *Cancer statistics review 1973-88*. Bethesda, MD: National Cancer Institute, 1991. (NIH Publ No 91-2789.)

4 Giles GG, Lickiss JN, Baikle MJ, Lowenthal RM, Pantan J. Myeloproliferative and lymphoproliferative disorders in Tasmania, 1972-80: occupational and familial aspects. *J Natl Cancer Inst* 1984;72:1233-40.

5 Blair A, Dosemeci M, Heineman EF. Cancer and other causes of death among male and female farmers from twenty three states. *Am J Ind Med* submitted.

6 Blair A, Zahm SH. Cancer among farmers. *Occupational Medicine: State of the Art Reviews* 1991;6:335-54.

ease Registry (ATSDR).

In addition to the invited presentations, opportunities are available to present posters with the same general theme. An objective of the Conference is to begin to develop recommendations concerning the monitoring of the health of individuals exposed to toxic chemicals.

Details may be obtained from KIM, Mauerkircherstrasse 4, D-8000 Munchen 80, Germany.

**Australia and New Zealand
Society of Occupational
Medicine (ANZSOM) annual
scientific meeting.
Bali, 3-8 April 1993**

NOTICES

**Arnold O Beckman International
Federation of Clinical Chemistry
European Conference.
Munich, Germany,
16-18 June 1993**

The first Arnold O Beckman/IFCC European conference on the impact of environmental chemicals on human health will consider biomarkers of chemical exposure. The conference is organised by the International Federation of Clinical Chemistry in cooperation with the World Health Organisation (WHO), the Commission of the European Community (EEC), the International Programme on Chemical Safety (IPCS), Centers for Disease Control (CDC), and the Agency for Toxic Substances and Dis-

The main topics to be covered are occupational health in the tropics; diseases of travellers (in the tropics); ergonomics; legal aspects of Occupational Health.

The ANZSOM is a group of doctors interested in Occupational Health, not just those who limit their practice to Occupational Health. It has members in several countries in south east Asia and by holding the meeting in Bali seeks to strengthen ties with countries in the region.

The scientific meeting is open to all interested in occupational health. Papers are welcomed in any of the four broad areas designated above. Colleagues, whether members or not, are welcomed.

Papers should be submitted to, and further information obtained from: Associate Professor P S Hollingworth, PO Box 1039, Nedlands, 6009, Perth, Western Australia.