Correspondence

Occupational asthma due to an emulsified oil mist

Sir,—The report by Hendry *et al* (1985;42:51–4) on occupational asthma due to an emulsified oil mist, while of considerable interest to physicians working in industry, raises a number of questions.

It is unfortunate that the paper indicated the asthma was due to oil mist rather than to a specific constituent—namely, the pine oil extract reodorant, which, from the evidence presented, would appear to be the true cause.

No indication was made of the environmental levels of oil mist present at the workplace. I suspect that during provocation testing environmental levels of the relevant agents would not have been detectable by readily available techniques. Normal standards for acceptable oil mist in atmosphere are 5 mg/m³. Subjectively this level is extremely high, and most measurements in engineering workshops are, in my experience, between 0.8 mg/m³ and 1.5 mg/m³. It may be that in the subject's case contamination with other constituents including mineral oils and volatile solvents had occurred.

In view of the ubiquity of oil mists throughout industry, it is perhaps surprising that there has been no previous report of allergic respiratory phenomena. Perhaps, as has been stated by Burge previously, such asthma is overlooked more than it is diagnosed. This may, of course, reflect the subclinical nature of the symptoms for the individual concerned.

To assess the place of pure emulsified oil mist in the aetiology of asthma it would be wise to obtain the soluble oil without the reodorant from the manufacturers and to perform bronchial provocation testing using a carefully designed study.

The implications of this case could be important for industry and, therefore, further work should be undertaken with particular reference to the levels of environmental mist to determine if a dose response relationship is present.

Finally, as a purely practical point, what does one do with a machine operator who becomes allergic to oil mist? Redeployment will be almost impossible and, therefore, the implications for the individual are far reaching and possibly tragic.

EOIN S HODGSON

Milton Keynes Occupational Health Service Ltd,
Whalley Drive,
Bletchley,
Milton Keynes MK3 6EN.

Dr Burge and his colleagues reply:

We thank Dr Hodgson for his comments on our paper. We have measured breathing zone levels of oil mists at the workers' factory on many occasions. The values have been generally between 0.1 mg/m³ and 0.6 mg/m³. On one occasion the extraction system was turned off to mimic the exposure levels during a breakdown. Oil mists in air measurements were then 1.3 mg/m³.

We have seen about 15 workers with occupational asthma from oil mists to date. The causes appear to be heterogeneous in this group. So far two workers have classic occupational asthma with symptoms becoming progressively more severe throughout the working week. One was reported in our paper, the second reacts to clean nebulised oil with a breathing zone level of 1 mg/m³. The precise cause in this woman is not clear. We have also seen several workers whose symptoms are more severe on the first day of work after a break, particularly when the machinery has been left idle for a few days. One such worker who reacts only to nebulised used oil rather than clean oil has been fully investigated. Such a reaction could be due to metal from the tool or workpiece or to microbiological contamination of the oil. The finding of symptoms most severe on the first workday is similar to that seen in occupational asthma from contaminated humidifiers and may imply a microbiological cause. This certainly requires further investigation.

A third group of workers have equivalent deterioration each workday, often of fairly small degree and often superimposed on a background of chronic obstructive lung disease. Perhaps the most likely cause in this latter group is an irritant reaction in workers with pronounced pre-existing bronchial hyper-reactivity.

The worker on whom we reported had occupational asthma related both to the reodorant (pine oil) and to the emulsifier (a colophony derivative). We have investigated another worker from the same factory with similar symptoms of occupational asthma who failed to react to pine oil reodorant. The problem is therefore complex: it is also made more difficult as the constituents of the oils vary from time to time without change of labelling. We would agree that most workers with occupational asthma have not been diagnosed. A worker with chronic airways obstruction from any cause should be asked if their symptoms improve on days away from work or on holiday. Workers with occupational asthma will be found among these groups.

P S BURGE
M S HENDY
B BEATTIE