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Runaway Dust Irritates Eyes

On October 7, 1987, a 39-year-old man complaining of facial and ocular burning, presented to the emergency room at a local Anchorage hospital. On examination he was noted to have an erythematous facial rash and conjunctival injection. The patient was employed by a contractor to remove and replace the asphalt on an airport runway. He had been driving a caterpillar tractor when dust from old ground-up asphalt blew into his face. In the emergency room his eyes were copiously irrigated; he recovered within 24-48 hours. After an alert emergency room physician obtained a history that other workers reported similar symptoms, he reported the case to the Section of Epidemiology.

Our investigation disclosed that approximately 50 people had been working on the repaving project for several months. Two other workers complained of similar facial and ocular irritation during August and September. Both recovered completely. The mechanism of injury was similar for all cases; asphalt dust from the old, removed runway had blown into the workers' faces. If water had been used to reduce the amount of dust, it is possible that these injuries might have been prevented. Also, to the extent possible, workers could have positioned themselves downwind so that dust would tend to blow away from them.

Asphalt is a complex mixture containing primarily high molecular weight hydrocarbons. In the United States, more than 90% of asphalt products are derived from petroleum. When used for roofing, asphalt is usually combined with coal tar, a known carcinogen and irritant. However, there is no clear epidemiologic or laboratory evidence for an association between asphalt exposure and any chronic disease (1). One study failed to demonstrate any association between asphalt exposure and dermatitis in petroleum company workers but did show a possible weak association for highway construction workers (2). Asphalt is not considered a hazardous substance by the National Institute for Occupational Safety and Health (NIOSH). Because of this, there are no guidelines or regulations to limit or control exposure. The worker reported to the Section of Epidemiology was exposed to dust from asphalt which may have, over the years, become saturated with airplane fuel and/or rubber compounds from airplane tires. Thus, it is difficult to assess the exact nature of this exposure.

The total number of occupationally-related deaths, injuries, and diseases can only be estimated. Each year 100,000 Americans die of occupationally related diseases and 400,000 become ill (3). Over 3 million people are disabled each year due to work related illness or injury (4). A complete occupational history covers 5 areas (4):

1. Job History: This should include both current and previous positions.
2. Hazardous Exposures and Protective Measures: Workers are often able to describe the nature of their occupational exposures and potential inadequacies of protective measures.,?LI>
3. Illness Patterns Among Other Workers: Do other workers with similar exposures have symptoms?
4. Non Work-related Exposures: Are there other exposures (for example, smoking) which might contribute to the illness?
5. Relationship of Symptoms to Work: Are symptoms exacerbated at work? For diseases with long latency, has sufficient time elapsed since exposure began?

This case demonstrates the importance of obtaining an occupational history. The prompt reporting of known or suspected occupational conditions to the Section of Epidemiology can be helpful in identifying disease clusters and possibly preventing additional cases.

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References

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