

Intoxication from mercury spilled on carpets

SIR,—Mercury intoxication (acrodynia, pink disease) from medicinal products is now so rare that many paediatricians and general practitioners may be unfamiliar with its often insidious onset and vague early signs. Environmental mercury pollution remains a cause for concern, and outbreaks of mercury poisoning associated with contaminated foodstuffs and water have been reported in several countries. I describe here chronic mercury intoxication in three children caused by a broken thermometer.

A 33-month-old girl was admitted in May, 1988, for anorexia, weight loss, light sensitivity, and eczema, starting 4 months previously. She had widespread severely itching eczema and pink, sweating, and scaling palms. She was ill-tempered and preferred to lie in bed or be taken around in a small buggy. She was sensitive to light. Acrodynia was suspected, and raised mercury concentration was found in the urine. After 2 weeks of chelation therapy with DMPS (2,3-dimercaptopropan-1-sulphonate; 'Dimaval' 30 mg twice daily) the child's eczema and mood began to improve. After 4 months of therapy all symptoms had disappeared and mercury excretion was normal.

This girl's 20-month-old sister had papulovesicular eczema with superinfections and severe prurigo which had started 6 weeks earlier; she had lately become anorexic. Her basal urine Hg excretion was low, but it increased after administration of DMPS. Symptoms started to disappear 2 weeks after the start of therapy, and she was clinically normal 4 months later.

The brother, aged 6 years 10 months, was the least severely affected of the three sibs. He had an itching exanthema and was thought to have been more nervous than usual. He had raised concentrations of mercury in urine after DMPS administration and improved with chelation therapy.

Urinary mercury concentrations ($\mu\text{g/l}$) were:

Date (1988)	Case 1	Case 2	Case 3
May 19	26.8		
25	55.1	6.9	
30	250.5*		
June 4	50.2		
7	230.8		
11		266.3*	
13	77.9		
14	10.9	146.7	
22	5.3	56.1	
29	19.8	82.6	
July 2			137.4*
6	41.7	6.8	37.8
13	55.8	4.7	46.2
20	4.0	23.2	14.0
27	25.4	20.0	
Aug 1			3.5
Oct 11	3.2	3.4	1.5

*Two days after DMPS. 3×50 mg per day.

Subsequently we learned that in the preceding autumn (ie, about 8 months earlier) a thermometer had been broken in the children's room which was small and had floor heating. The mercury had been spilled onto the carpet and was not retrievable. In the room air 9 months after the accident no mercury was detectable.

The cases described here show that even small amounts of mercury, spilled in a small, possibly not sufficiently aerated room, can cause severe acrodynia, presumably via metal vapour. These children were sent to the Kinderhospital with a diagnosis of neurodermitis and it took several days for the correct diagnosis to be

made. Nonetheless the clinical picture in the first child was classic and should have been sufficient for an instant presumptive diagnosis.

For occupational exposure monitoring, urinary excretion of up to 200 $\mu\text{g/l}$ and blood concentrations of 50 $\mu\text{g/l}$ are acceptable in Germany but young children are unusually sensitive. In 39 cases of acrodynia in children aged up to 5 years reported by Warkany and Hubbard¹ peak urinary concentrations of mercury were below 200 $\mu\text{g/l}$ in 24, and recent published German cases support this observation.²⁻⁶ Case 2 shows that the basal urinary excretion of mercury can be normal even in overt acrodynia, and the data presented here may be an important contribution to the debate on the safety of mercury amalgam dental fillings. Cases of chronic mercury poisoning may be being missed, even today, and all paediatricians and child psychiatrists should familiarise themselves with the clinical picture.

Kinderhospital Osnabrück,
D 4500 Osnabrück, Germany

KARL ERNST V MÜHLEND AHL

1. Warkany J, Hubbard DM. Adverse mercurial reactions in the form of acrodynia and related conditions. *Am J Dis Child* 1951; 81: 335-73.
2. Stelgens P, M. Selter-Swift-Feer: eine iatrogene Kinderkrankheit. *Kinderarzt* 1983; 14: 260-70.
3. Schöne D, Stelgens P. Die Feersche Krankheit (kindliche Akrodynie). *Pädiat Prax* 1969; 8: 439-47.
4. Giesen H, Scheffzek A. Akrodynie (Feer-Krankheit), ausgelöst durch zerbrochene Fieberthermometer. *Pädiat Prax* 1986; 33: 265-68.
5. Herl M, Rösiger A, Schultze-Rhonhof J, Schweinsberg HW. Akrodynie (Feer-Krankheit)—wieder aktuell durch ein quecksilberhaltiges Stomatologikum. *Kinderarzt* 1982; 13: 677-82.
6. Schwartz J. Feersche Erkrankung (kindliche Akrodynie). *Tägl Prax* 1980; 21: 61-65.