CASE REPORT

The accidental self-injection of mercury: a hazard for glass-blowers

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INTRODUCTION

Mercury is widely used in the chemical and paper industry, medicine and agriculture, but metallic mercury poisoning is rare and the clinical outcome is unpredictable (Johnson & Koumides, 1967).

This paper reports a case of accidental self injection of mercury into the palm of a glass-blower occurring during the manufacture of mercury thermometers.

CASE REPORT

A 57-year-old right-handed glass-blower presented with a penetrating injury to the hypothenar eminence of his left hand sustained as he was tapping the bulb to dislodge air bubbles while making a mercury thermometer.

The hypothenar eminence was swollen with a small puncture wound 3 cm from the distal wrist crease. There was no tendon or neurovascular damage. A radiograph showed multiple subcutaneous droplets of metallic mercury (Fig. 1).

The arm was exsanguinated by elevation and the puncture wound excised as an ellipse releasing many of the mercury droplets. The remainder were removed using a small sucker and fine forceps, and the wound flushed with copious amounts of saline. A 2-cm-long sliver of glass was removed from Guyon's canal, the wound packed, elevated and closed by delayed primary closure at 5 days. Healing was uneventful and the patient returned to work 2 weeks later. His chest X-ray was then normal, and serum and urinary mercury assays were normal.

Fig. 1 Admission X-ray of patient's left hand showing multiple radio-opaque mercury droplets.

DISCUSSION

Subcutaneous metallic mercury may cause a local fibrous reaction (Rachman, 1974), Abscess formation (Hill, 1967; Krohn *et al.*, 1980), pulmonary embolisation (Conrad *et al.*, 1957) and even death (Johnson & Koumides, 1967). Although there have been sporadic reports in the literature, injury with metallic mercury is rare (Johnson & Koumides, 1967). Although the oral ingestion of mercury is usually non-hazardous, the injection of mercury into the subcutaneous tissues may lead to systemic absorption. The resultant clinical outcome is difficult to predict as fatal mercury poisoning by injection is actually very rare, Johnson & Koumides (1967) only quoting three deaths in 27 cases reported in a period of 70 years.

In over 300 emergency hand referrals to the Plastic Surgery Department in the past year, this is the only case of mercury injury and the patient has stated that in his 40 years

of manufacturing mercury thermometers this is the first occasion that anyone from the factory has sustained an injury with metallic mercury.

In view of the possibility, though rare, of potentially fatal complications from the subcutaneous deposition of metallic mercury (Johnson & Koumides, 1967), the authors would advise aggressive local management of the wound (Kern *et al.*, 1972) which should be completely excised, and the metallic mercury droplets removed by copious saline irrigation, suction and by lifting them out with fine forceps.

The authors would not recommend the local topical application of Dimercaprol, which is usually given intramuscularly for the treatment of systemic mercury poisoning to enhance renal excretion, as it may, in fact, delay wound healing if applied locally (Baruch & Haas, 1984).

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