

SHORT REPORT

Mercury intoxication presenting with tics

Albert M Li, Michael H M Chan, T F Leung, Robert C K Cheung,
Christopher W K Lam, T F Fok

Abstract

A 5 year old Chinese boy presented with recurrent oral ulceration followed by motor and vocal tics. The Chinese herbal spray he used for his mouth ulcers was found to have a high mercury content. His blood mercury concentration was raised. Isolated tics as the sole presentation of mercury intoxication has not previously been reported.

(Arch Dis Child 2000;83:174-175)

Keywords: tics; mercury poisoning; Chinese medicinal herb

Case report

A 5 year old Chinese boy of healthy unrelated parents presented to our hospital on two occasions—initially with oral ulceration, and then with motor and vocal tics. The oral ulceration, which mainly affected the left lateral aspect of his tongue, appeared approximately five weeks prior to the onset of tics. Herpetic ulceration was diagnosed and confirmed by the isolation of herpes simplex virus (HSV) type 1 from his tongue swab. The lesion improved after treatment with a five day course of oral acyclovir (200 mg five times daily), but relapsed a few days after finishing the course of medication. The family then consulted a local pharmacist who prescribed for the child a Chinese medicinal herb (CMH) mouth spray, named “Watermelon Frost”. The spray was said to be useful in controlling pain and healing difficult mucosal wounds.

Over the following weeks, his mother noticed an improvement in his oral symptoms but commented that he had become irritable and had been clearing his throat frequently. A transient skin rash was also noticed on his trunk a few days before his second admission. On the day of admission, he developed a sudden onset of motor tics that consisted of eye blinking, head turning, and shoulder shrugging. There was no preceding history of flu like symptoms, head injury, or consumption of other drugs or herbs. His general health had been good and his developmental milestones were normal. There was no family history of any psychiatric or neurological problems. He had been on a normal unrestricted diet and there was no history of excessive seafood consumption.

He looked well on examination, which was interrupted by episodes of motor tics as described. Blood pressure was 110/65 mm Hg

and heart rate 96 beats per minute. No skin rash or desquamation on the palms and soles were noted. There was a small healing ulcer at the tip of his tongue. His speech and gait were normal. Cardiovascular, respiratory, abdominal, and neurological examination did not reveal any abnormalities.

Initial investigations including complete blood count, renal function tests and electrolytes, liver enzymes, immunoglobulins, complement, as well as urine analysis and toxicology screen were all normal. Electroencephalography, cranial computerised tomography, and magnetic resonance imaging were also normal. Serum antineuronal antibody as determined by flow cytometry (less than 5 MIF units) and ASOT (less than 60 Todd units) were not raised.

On further questioning, our patient admitted that he had been using the CMH mouth spray up to 20 times a day for the preceding four weeks, when the recommended dose was only one spray twice a day. As the use of herbal medication always arouses the suspicion of heavy metal exposure in the locality, screening for heavy metals was performed.

The herbal spray was digested with concentrated nitric acid (12 mmol/l) for five days at room temperature, and total mercury concentration was then measured by cold vapour atomic absorption spectrophotometry (Flow Injection Mercury System, Perkin Elmer Corp., Norwalk, Connecticut, USA). Arsenic, manganese, and lead contents were determined by graphite furnace atomic absorption spectrophotometry (SIMAA 6000 Analyser, Perkin Elmer Corp.). The blood concentrations for lead and manganese were 0.31 µmol/l (normal <1.5 µmol/l) and 246 nmol/l (normal 70-280 nmol/l); urine arsenic was 10 nmol/mmol creatinine (normal <68 nmol/mmol). Blood mercury concentration was 83 nmol/l (normal for adults <50 nmol/l). The mercury content of the spray was 878 ppm (2% methylmercury and 98% inorganic mercury). There was also a significant difference in mercury content between different brands as well as batches of the same brand of CMH (see table 1). Sensory and motor nerve conduction velocities in our patient were normal. Detailed neuropsychological assessment was also normal.

The CMH spray was discontinued on admission. As the patient was clinically stable and his neurological symptoms improving,

Department of
Paediatrics, The
Chinese University of
Hong Kong, 6th Floor,
Clinical Sciences
Building, Prince of
Wales Hospital, Shatin,
Hong Kong SAR,
China

A M Li
T F Leung
T F Fok

Department of
Chemical Pathology,
The Chinese
University of Hong
Kong

M H M Chan
R C K Cheung
C W K Lam

Correspondence to:
Dr Li
email:
Albertm68mcli@yahoo.com

Accepted 22 March 2000