An unusual complication of a pyrexia

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**Clinical**—A 6-year-old girl was brought into our emergency clinic for acute onset diffuse colicky pain in her abdomen. There was no history of diarrhoea or vomiting. She was having low-grade fever with rhinorrhoea for 2 days for which she was treated with antipyretic and nasal decongestant drugs for 1 day. Clinical examination was within the normal limit. Ultrasonography of whole abdomen was done but revealed no abnormality.

An erect abdominal radiograph was performed, which revealed small homogenous droplet-like opacities throughout her abdomen (Figure 1).

Routine laboratory investigations were normal.

*Figure 1. Erect abdominal radiograph showing multiple droplet-like opacities throughout the abdomen*

What is the abnormality and its management?
Answer and Discussion

Her parents could not find any unusual food intake in recent past, but on more specific enquiry the child admitted that she had accidentally swallowed something while measuring her oral temperature by clinical thermometer at home.

The thermometer was broken inside her mouth, by inadvertent pressure from her teeth, but she suppressed this fact from her parents. She was admitted for observation. General and systemic examination showed no signs of elemental mercury toxicity. Blood and urinary level of mercury and BUN values were normal. Her abdominal pain subsided with anti-spasmodic drugs and the patient was symptom-free after 24 hours. The patient was discharged in stable condition. In her follow-up visit after 1 week, a repeat X-ray abdomen was done, which revealed no such white opacities. Blood and urinary levels of mercury were measured again and were within the normal limit.

Human exposure of elemental mercury mostly occurs in academic institutes, home, healthcare facilities. Accidental exposure of mercury from broken medical thermometer is quite common in children below 6 years. Moreover, children are susceptible to toxic mercury vapour which is much heavier than air, accumulating preferentially in their breathing zone.

Absorption through the gastrointestinal tract and skin is quite low. Elemental mercury following ingestion was found to localise in appendix preferentially, occasionally culminating in acute appendicitis. But multiple case reports revealed no features of systemic toxicity after ingestion of mercury from a broken thermometer, though prophylactic medical (e.g. laxative) or surgical (e.g. appendectomy) measures were taken.

Active measures for decontamination in out-of-hospital exposure was mentioned in guideline suggested by E. M. Caravati et al; where they have also shown no therapeutic benefit of active decontamination (chelation) methods after ingestion of thermometer mercury.²

Routine clinical evaluation in an emergency medical service will suffice for “small spills” like from a broken thermometer.

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