Reminder of important clinical lesson

Assessment and management of mercury poisoning with an unusual abdominal x-ray!

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Summary

This case discusses a gentleman who presented to the medical team after ingesting mercury liquid. We discuss the assessment, management and different types of mercury poisoning.

BACKGROUND

This is an unusual case presentation of deliberate self-poisoning accompanied with an unusual abdominal x-ray.

daily and consumed approximately 2 litres of cider per day. He ingested approximately 100 ml of liquid mercury. He complained of no symptoms.

CASE PRESENTATION

A 69-year-old man was admitted after deliberately ingesting liquid mercury with suicidal ideation. He had a medical background of hypertension, smoked marijuana

INVESTIGATIONS

On admission, observation of the patient's blood, ECG and clinical examination were unremarkable. Mercury levels were assessed at the local tertiary centre and

Figure 1 Abdominal x-ray in this 69-year-old man 5 days after deliberately ingesting mercury.

reported as 154 nmol/l (<20 nmol/l). Environmental health advised that he should be isolated and that bodily excretions should be exposed safely. At 5 days after admission he complained of abdominal pain. The abdominal x-ray (figure 1) reported a dense concentration of mercury throughout his bowel especially on the right side.

TREATMENT

He was managed on the ward conservatively and given high-dose laxatives to aid excretion of mercury from his bowel. Unfortunately due to his on-going abdominal pain he remained in hospital. Serial abdominal x-rays confirmed that mercury remained within his appendix and was not clearing into his bowel. The surgical team reviewed the patient and suggested that if the symptoms did not improve, they would consider an appendectomy. He continued to take high-dose laxatives and now 1 month following his overdose he remains symptom free.

OUTCOME AND FOLLOW-UP

He was discharged at 3 weeks following his overdose. He is due for follow-up in 6 weeks time.

DISCUSSION

Mercury poisoning can be acute or chronic. Mercury can be ingested, inhaled or given in subcutaneous or intravenous form. It can exist as elemental mercury, inorganic salt or organic compound. Poisoning can be due to deliberate self-harm, occupational exposure, contaminated fish, through medical equipment such as broken sphygmomanometers.¹ There have also been reports of cosmetic products containing mercury such as skin-lightening products.²

The most lethal form of mercury poisoning is due to inhalation of mercury vapour. This can lead to pneumonia, adult respiratory distress syndrome, headache, nausea and vomiting and even death.³ A case in the USA reported that a family was exposed to mercury vapour as a consequence of home gold ore processing and despite aggressive medical management two of the eight patients affected died due to pulmonary failure.⁴

If elemental mercury is ingested, then systemic absorption is unlikely with the exception of those suffering from gastrointestinal conditions such as diverticulosis. Therefore, elemental mercury may be retained for longer periods of time, which causes the bacterial conversion of elemental to organic mercury causing it to be systemically absorbed.¹

Delayed sequelae may feature after both acute or chronic mercury exposure leading to, for example, neuropsychological and renal complications. These include acute tubular necrosis, nephritic syndrome, depression, anxiety and headaches.^{1 2}

Management of patients with mercury poisoning should include FBC (full blood count), U&E (urea and electrolytes) plus blood and urinary mercury concentration. Patients should remain isolated. Chelating agents may aid elimination. The antidotes used are unithiol (2,3-dimercapto-1-propanesulfonic acid) and succimer (dimercaptosuccinic acid).² Plasma exchange and haemodialysis may aid this and should be considered in all patients due to the potential of developing long-term neuropsychiatric pathology.

Learning points

- It is important to consider the type of mercury poisoning (ie, inhalation, ingestion) in order to assist your management plan.
- Seek appropriate advice from your local toxicology centre, especially when dealing with unusual types of poisoning.
- Check paracetamol levels in all patients presenting with deliberate self-poisoning.
- Mercury poisoning may have delayed sequelae so all patients should be followed up in clinic soon after discharge.
- All cases of deliberate self-poisoning warrant a psychiatric review before discharge.

Competing interests None.

Patient consent Obtained.

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