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Suicidal Mercury Poisoning Presenting As Multiple Abscess-A Case Report

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Abstract:
Mercury toxicity is seen mostly due to continuous exposure in hat, mirror occupational workers, unwarranted therapeutical use of mercury, continuous topical application. .Hydrargyrism and its chronic effects are well documented and published in various occasions. Self injection of elemental mercury as method of suicide is rare but well documented. There has been increase in incidence of these cases mainly by those in suicidal depression, seeking to improve sexual or athletic performances or due to misguidance of media.

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I. Introduction

Mercury poisoning is a form of metal toxicity caused by mercury exposure. The kind, dose, technique, and duration of exposure all influence the symptoms. Muscle weakness, poor coordination, numbness in the hands and feet, skin rashes, anxiety, memory problems, difficulty in speaking, hearing, or seeing are some of the symptoms that might occur. Minamata disease is caused by high levels of methylmercury exposure. In youngsters, methylmercury exposure can cause acrodynia (pink illness), in which the skin turns pink and peels. Long-term side effects could include kidney problems and a loss of intelligence. The long-term effects of low-dose methylmercury exposure remain unknown.

II. Case Report

A 21 year old, unmarried female previously healthy girl presented with the history of mild fever and swelling, redness, with spontaneous oozing of bright silvery lustrous metallic droplets at multiple sites of both upper and lower limbs. She gave no other significant history. Physical examination was unremarkable with stable vitals.On suspicion of foreign material, X- ray were taken which showed string of bead appearance in multiple sites of both limbs.On further questioning, patient was reluctant to give any history. Incision of abscess in multiple upper and lower limb showed seropurulent discharge with presence of multiple tiny metallic droplets in subcutaneous and muscle planes which was bright lustrous silvery metallic droplets and sent for chemical analysis. Forensic science Laboratory confirmed the metallic droplets as Mercury metal. Management of the patient required multidisciplinary approach with regular cleaning and dressing of wound and started on chelating agent BAL.On continuous confrontation, she revealed the history of injecting herself with Metallic Mercury at multiple sites of both her upper and lower limbs.psychiatric counselling given .

Fig 1,2,3 clinical picture of multiple upper and lower limb abscess .

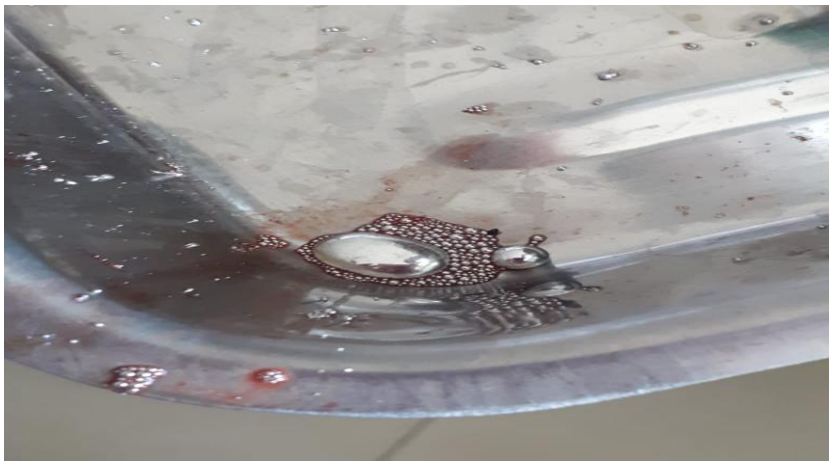

Fig 4.picture showing spontaneous oozing of bright silvery lustrous metallic droplets from left thigh.

Fig 5. Radiological imaging shows string of bead appearance in multiple sites of both limbs.

Fig 6 I&D of right thigh showing seropurulent discharge with presence of multiple tiny metallic droplets.

Fig 7 .specimen of collected material sent HPE.

Sub: Examination of Incised and Drained Material of Ms[redacted]

Sex: Female Age: 21 Y.

Ref: Your letter Dated.01.09.2021.

A sealed synthetic container labelled "[redacted]...21/F... IP No.[redacted]..Incised and drained material from left upper arm..." and containing reddish brown liquid with silvery white globules measuring 4ml was received here on 01.09.2021 through Dr.[redacted] Final Year Post Graduate, Dept. of General Surgery, CMCH, CBE.

The above article was examined and detected Mercury in it.

[redacted] M.Sc)
Dy. Director and Asst. Chemical Examiner to Govt.,
Regional Forensic Science Laboratory,
Coimbatore.

[redacted] M.Sc.,M.Phil.,)
Scientific Officer.

vs

Note : The sample is completely used up for analysis.

FO/ Dept of Gen. Surgery 9/9/21

Resident Medical Officer
Coimbatore Medical College Hospital
Coimbatore-18

Fig 8.forensic report showing detected sample as mercury.

III. Disscussion

At ambient temperature, mercury is the only common metal that is liquid. Thermometers, manometers, electronic gadgets, mercury vapour lamps, skin ointments, and dental amalgams are all made with it. When mercury enters the plasma, it takes the form of small spherules or coalesces because to a high water-metal interfacial tension and a lack of attaching to other materials. Pulmonary embolization is uncommon, and when it does occur, it is either an accident or the result of somebody deliberately injecting themselves, either for self-intoxication or suicide attempts. The right ventricle disseminates mercury throughout the pulmonary circulation, resulting in an unique radiological appearance due to its high atomic weight. Depending on the dose of mercury exposure, micro nodular or tubular opacities may develop; these opacities are symmetrically and bilaterally distributed, as shown in our patient. Mercury can enter the systemic circulation after passing through the pulmonary capillaries and precapillary shunts, as shown in our patient's metallic densities over the renal and ureteric areas. The metallic densities were distributed in a thin linear pattern over the lumbar spine and pelvis, and were most likely in the capillaries. Radiologically, aggregations of mercury at the injection site can be detected in cases of intravenous self-administration in the forearm veins. Mercury is poisonous in any form. When administered intravenously, elemental mercury can induce a wide range of symptoms, ranging from complete lack of symptoms (the diagnosis being made by chance) to respiratory failure, kidney damage, liver damage, neurologic problems, and even death. Mercury's toxic effects after subcutaneous injection are less severe than those reported after acute inhalation. Mercury, however, is quickly dispersed throughout the body, particularly in the lungs, once it enters the bloodstream. Close monitoring of the patient's clinical status is essential in cases of mercury poisoning, with follow-up for at least two years. Many case reports have documented findings that are comparable to those seen in our patient. Mercury is primarily eliminated from the body through the kidneys, but elimination is typically sluggish, and traces of mercury can be observed on radiographs and in urine even two years after the index event. Radiographs obtained six weeks later revealed no substantial change in our situation as well. Over the course of two years of follow-up, our patient, on the other hand, made a complete clinical recovery and showed no signs of renal, hepatic, neurologic, or pulmonary sequelae.

IV. Conclusion

Further studies and follow up are required to acquire knowledge about the chronic effects and prognosis in this case. This signifies the importance of Clinical toxicologyIncreasing incidence of these cases, shows importance of imposing restriction of unwarranted sale and purchase of toxic substances.

CONSENT

The authors would like to thank the patient for providing informed consent for the publication of this case report.

CONFLICT OF INTEREST

Authors have no conflict of interest to declare.

AUTHOR CONTRIBUTION

1. Patient management and treatment decisions.
2. Patient management, surgical treatment and manuscript writing.
3. Patient management, manuscript writing.

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