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Incidental Findings of Aluminum Phosphide Poisoning – A Case Report

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Abstract: Accidental aluminium phosphide poisoning is a big, under-reported, problem throughout the universe, especially in Indian. Aluminium phosphide, is easily available as a fumigant for stored cereal grains, to kill bedbugs, sold under various brand names such as *QuickPhos* and *Celphos*, these are highly toxic, especially when consumed from a freshly opened container.[1,2] On July 2017 we received a deceased body of 32year old female for post mortem examination at department of forensic medicine & toxicology, Adichunhanagiri Institute of Medical Sciences, B G nagar. On opeining the abdomen liver and spleen are enlarged, weighing liver-2125gms and spleen -600gms. Heart was subjected to histopathological examination, it shows signs of myocarditis. So while doing autopsy in a suspicious cases, body should be subjected gross, histopathology, FSL examination to give accurate cause of death.
Keywords: autopsy, hepatomegaly, splenomegaly, myocarditis, alluminium phospide poisoning.

INTERODUCTION

Accidental aluminium phosphide poisoning is a big, under-reported, problem throughout the universe, especially in Indian. Aluminium phosphide, is easily available as a fumigant for stored cereal grains, to kill bedbugs, sold under various brand names such as *Quick Phos* and *Celphos*, these are highly toxic, especially when consumed from a freshly opened container [1,2].

Cause of death in alluminium phoside poisoning is mainly due to shock, myocarditis and multi-organ failure. Aluminium phosphide has a fatal dose of between 0.15 and 0.5 grams. Death due to aluminium phosphide poisoning is very common in India and other countries like Thailand and other Asian countries since it has been commonly used to kill bedbugs at home, industries [3,4].

Aluminum phosphide (ALP) poisoning is one of the major causes of suicidal deaths in India and other countries. Toxicity by ALP is caused by the liberation of phosphine gas, which rapidly causes cell hypoxia due to inhibition of oxidative phosphorylation, leading to circulatory failure. Since there is no specific antidote, treatment of ALP toxicity is mainly supportive. Mortality with ALP poisoning is very high, ranging from 37% to 100% [5].

AlP is a solid fumigant and ideal pesticide since centuries as it is cheap, most efficacious and easy to use and freely available over the counter in India (as Alphos, Celphos, Quickphos, Phostek, Phosfume and Synfume) and in Morocco (as Phostoxin) in the form of chalky white or brown 3 g tablets containing 56% of AlP and 44% of ammonium carbonate. The tablets are taken out of a sealed container and placed on stored grains and the storage container is closed for a few days to eliminate moles and vermines in granaries. AlP has a relatively high vapour pressure, which allows it to penetrate porous material effectively. On coming into contact with water or moisture or OH radical of air or hydrochloric acid in the stomach, a 3 g tablet of AlP releases 1 g of phosphine or phosphorus hydrogen [6,7].

CASE REPORT

On July 2017 we received a deceased body of 32year old female for post mortem examination at department of forensic medicine & toxicology, Adichunhanagiri Institute of Medical Sciences, B G nagar.

HISTORY

A 32 year old lady brought by relatives to the casualty of Adichunhanagiri Institute of Medical Sciences, B G nagar with history of fever since 3 days,

taken medication from nearest general practitioner. She was a known case of hypothyroidism and hypotension on irregular treatment.

On examination at casualty, Pupil dilated BP and Pulse not recordable, death declared after taking ECG.

Medico-legal-case intimation was sent to nearest police station and inquest report was prepared by concerned police under section 174 © cr.p.c.

POSTMORTEM FINDINGS

Deceased body is of a 32 year old female, well built and nourished. Rigor mortis present all over the body and post mortem lividity present at back.

On opening the skull and thoracic cavity, no unusual findings were seen. On opening the abdomen liver and spleen are enlarged, weighing liver-2125gms and spleen -600gms.

Heart was subjected to histo-pathological examination, it shows signs of myocarditis. As a routine procedure stomach and contents, liver and kidney, blood was preserved and forwarded to Forensic science laboratory for chemical analysis.

CONCLUSION

Based on above findings we were in an impression that, death could have been due to some natural disease leading to myocarditis and hepato-splenomegaly. But after careful observation of FSL report shows aluminum phosphide poisoning, which has directly lead to myocarditis and death. Finally we were able to give accurate cause of death based on FSL report.

So while doing autopsy in a suspicious cases, body should be subjected gross, histopathology, FSL examination to give accurate cause of death.

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