

Corrosive Acid: An Uncommon Suicidal Poison

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Abstract

Deaths from corrosive substances are uncommon in day to day medicolegal practice. We report a case of death due to ingestion of sulphuric acid with history of depression and previous suicidal attempt. He was provisionally diagnosed of acid ingestion but there was no history either from patient or from his relatives. Guidance and education are important preventive tools, but the best approach is to restrict access to corrosive agents, by prohibiting their free commercialization.

Keywords: Chalky white teeth, Trickling lines, Corrosive acid, Utensil cleansing business.

Introduction

- Corrosive poisons are those substances which corrode & destroy the tissues through direct chemical action.
- Deaths from corrosive substances are uncommon in day to day medico legal practice.
- We report a case of death due to ingestion of sulphuric acid with history of depression and previous suicidal attempt.
- He was provisionally diagnosed of acid ingestion but there was no history either from patient or from his relatives, as patient was alone at home at the time of incidence.
- Diagnosis was confirmed only after autopsy report.

Case report

- A 27 yrs old healthy married male was average built & nourished with history of depression & previous suicidal attempt.
- Occupationally, his family was engaged in utensil cleansing business.
- On one evening, he was alone at home & consumed about 150 ml sulphuric acid. Then neighbors brought him at district hospital at 6.15 pm.
- After primary treatment subject referred to medical college hospital at 6.45 pm but reached at medical college hospital at 9.30 pm in condition of shock and expired at 9.40pm.

Autopsy report

The postmortem done after 12 hours of death.

External findings

- The cloths are stained with brownish – blackish spots at places.
- Rigor mortis present all over the body.
- PM staining was present on dependent parts except the pressure points.
- Mouth was semi opened. Dusky whitish dried froth was present at opening of mouth. There was inflammation &

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excoriation of mucosa of lips. There was blackening of oral mucosa with blackish tongue. occlusal surface of upper central & lateral incisors were chalky white. Tricking lines from lower lip to chin was present.

- A superficial acid burn area (brownish in colour) of size 5x4cm, with trickling lines towards the fingers were present on dorsum of left hand medially.

Internal findings

1. Skull, Brain, Thorax-Healthy
2. Larynx & trachea- blackish mucosa present.
3. Abdomen
 - *Stomach* - converted into blackish ,soft mass with a perforation of size 4x3 cm, present at lower part of body. mucous membrane diffusely blackish in colour.
 - *Peritoneum* - blackish coloured material about 250 ml present in the peritoneal cavity left side mesentry adjacent to stomach & dependant parts of peritoneal cavity & dependant abdominal viscera stained with blackish coloured material.
 - *Liver, spleen, kidneys* - are congested.
 - *Bladder* - healthy & contains urine.
 - *Pharynx & oesophagus* - blackish coloured mucosa present. No perforation of oesophagus was seen.
 - *Small intestine* - blackish coloured mucosa.
 - *Large intestine* - internally healthy. Externally wall stained with blackish material.

FSL report

Confirm the presence of sulphuric acid.

Final opinion

The cause of death was given shock as a result of gastric perforation, due to ingestion of sulphuric acid.

Left hand acid burn area



Dusky white dried froth with trickling lines



Inflammation of lips & chalky white teeth



Blackish soft stomach mass with perforation



Discussion

- Within the adult population, suicidal intentions are recognized as the commonest cause of sulfuric acid ingestion as was in this case.[1]
- Sulphuric acid ingestion will lead to death by rapid cardiovascular collapse or shock Secondary to gastrointestinal tract rupture related chemical peritonitis.[2]
- It is reported that the squamous epithelium of oesophagus is relatively resistant to acid burns, while the columnar epithelium of stomach is much more frequent than perforation of oesophagus.[3]
- In 1927, a mohammedan male, 30 yrs, swallowed a quantity of a mixture of sulphuric acid & nitric acid after murdering his wife and child & died within 18 hours.[4]
- The fatal dose is 5-10 ml & fatal period 12-24 hrs.
- The ease of availability of acid because his family business contributed to

selection of this mode of attempting suicide.

- Individuals who attempt suicides by ingesting acid are typically conscious and lucid during the process, and as a result, concomitant aspiration pneumonia rarely occurs. When it occurs, it greatly increases the likelihood of death.[5]

Conclusion

Sulphuric acid is uncommonly used as suicidal poison. But in the present case subject was suffering from depression as per history & also history of previous suicidal attempt subject was alone at home & consumed a large quantity of acid.

These above findings suggest that it is a case of suicidal poisoning.

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