№ 075

When Curiosity Becomes A Crisis: Incidental Petrol Ingestion Leading To Chemical Pneumonitis In A Toddler

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Introduction

Accidental hydrocarbon ingestion is a significant paediatric emergency with potentially severe respiratory complications. This abstract highlights the emergency management following a case of petrol ingestion in a young child.

Case Description

A 1-year and 4-month-old boy presented with multiple episodes of vomiting following the ingestion of an unknown quantity of RON 95 petrol. The petrol had been poorly stored in a 1-litre plastic bottle within the household.

The child arrived 15 minutes post incident, alert, but irritable, exhibiting bouts of cough and vomiting. His vital signs: blood pressure 111/78 mmHg, pulse rate 164 beats per minute, respiratory rate 32 breaths per minute, and oxygen saturation 100% on room air. Initial lung examination noted no remarkable findings.

Laboratory investigation revealed significant leukocytosis (30x10^9/L) and thrombocytosis (755 x10^9/L) with haemoglobin 12.2 g/dL. Blood gas showed metabolic acidosis with pH of 7.21, pCO2 51 mmHg, lactate 3 mmol/L and bicarbonate 17.3 mmol/L.
The patient was given supportive oxygen therapy via face mask and commenced with intravenous fluid. Subsequently he was admitted to Paediatric Ward for close monitoring.

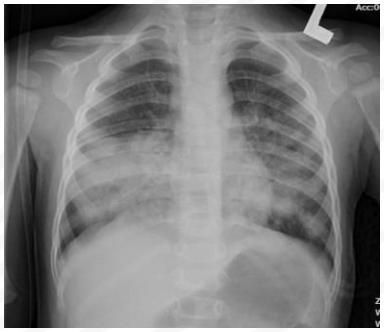

Figure A: Chest X-ray showing right middle zone haziness suggestive of aspiration pneumonitis

Discussion

Petrol ingestion is common due to its water-like appearance and child's exploratory behaviour. Once ingested, it's low viscosity and high volatility cause surfactant disruption and epithelial injury, leading to alveolar instability and ventilation-perfusion mismatch.[1] Almost immediately upon aspiration, there are signs of tracheobronchial irritation, manifested as coughing and choking.

Management prioritises airway protection and respiratory support. In severe cases, intubation may be warranted. As for the imaging, it is very common to see involvement of the right middle lobe.[2] Initial investigation may show leucocytosis which could denote the development of chemical pneumonitis.[3] Additionally, metabolic acidosis could be due to production of organic acid during hydrocarbon metabolism.[3]

In these cases, induction of vomiting is not recommended as it may cause further aspiration. Activated charcoal is also not advisable it does not effectively absorb petroleum distillate.[1]

Conclusion

This case highlights the rapid onset of chemical pneumonitis following accidental petrol ingestion. Aggressive respiratory support and multidisciplinary care are crucial for a successful outcome. Most importantly, public should be educated on safe storage of hazardous substance.

References:
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