

Proper management

Case 334

5. Gastric lavage

[Progress]

After gastric lavage, she was transported to expert mother-child health center.

Metal piece was already carried into colon. Two days later, she presented with her mother with active smile. center.

[Discussion]

Infants from crawling to standing up are usually curious about everything around them and eager to touch and even to swallow. They swallow coin, lithium battery, small toys, bottle cap, small cosmetic and small container. This time, our patient swallow cigarette with filter made of metal.

Lethal dose of nicotine is reported to be 30-60mg/adult (1). Nicotine is contained 12.5mg/cigarette in USA, indicative of 4 cigarettes reaching lethal dose (1), and 0.3 to 2.0mg/cigarette in Japan. Intoxication of nicotine is caused most by liquid nicotine or electronic tabaco in adult. Meanwhile, lethal dose of nicotine is 1mg/kg (1), indicative of necessity of avoiding to put nicotine products around infants.

Nicotine accelerates to secrete dopamine which enhance concentration and raise feeling, inducing to play a role of reducing fatigue and frustration.

Nicotine functions to contract vessel lumen and raise blood pressure, resulting in burden to heart for increasing cardiac output. The continuous smoking for years induce nicotine dependency whose is reported to be stronger than other narcotics such as heroine and cocaine. The disuse of nicotine induces withdrawal syndrome such as frustration and depression. The managements for nicotine intoxication listed are active carbon, intravenous sedation, ventilation, Benzodiazepines, atropine. In our case not yet with nicotine intoxication, gastric lavage was an emergency choice that interrupt to absorb nicotine from cigarettes.

Swallowing accidents by infants were reported in 2015 that three infants swallowed superabsorbent polymer ball placed in bathroom and, thereafter, small bowel obstruction occurred because these balls enlarged by absorbing intestinal fluids (2). Those underwent surgical management that palpated foreign mass in ileum and was pressed from outside and moved to colon (2). The inflated ball was excreted a few days later. As preventing measures, keep stuff off the floor, place stuff out of reach, get rid of stuff and dare to get rid of stuff are recommended. Further, toys of elder child are taken special care of.

In our case, infant swallowed cigarettes with filter whose nicotine volume was anticipated to reach to lethal dose underwent gastric lavage and filter was excreted a few days later, inducing to occur complete recovery.

[Summary]

We presented an eight-months-old girl infant with her mother for ingesting cigarettes with a metal filter while her mother was sleeping. She received gastric lavage which revealed many pieces of cigarettes, threatening to reach lethal dose of nicotine. Two days later, abdomen radiograph showed filter was gone, indicative of being excreted. It is borne in mind that one piece of Japanese cigarette includes nicotine 0.2 to 2mg, and lethal doses of nicotine in adult 30 to 60mg and those in children 1mg/kg. Nicotine functions to secrete dopamine that elevates concentration and feeling, inducing to decrease frustration and fatigue sensation. Further, nicotine makes vessel construction, inducing hypertension. Gastric lavage is crucial emergent treatment for cigarettes ingestion to interrupt nicotine intoxication.

[References]

1. Everything You Need to Know About Nicotine Poisoning. Centers for Disease Control and Prevention (CDC)
2. Doctor Mailbox1 on NCAC's website NCAC issued an alert on December 23, 2021.

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