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IMAGE OF THE MONTH

Potassium permanganate – an odd cause of caustic injury



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A 60-year old female patient presented in the emergency room with dysphagia and epigastric pain one hour after accidental ingestion of potassium permanganate crystal capsules. Her past medical history was unremarkable and she was recently self-medicated with charcoal pills for “detox”. The patient explained that she had inadvertently mistaken her charcoal pills with those of potassium permanganate. At physical examination, she had no difficulty breathing and she had visible purple discoloration of her tongue. Abdominal exam and laboratory workup were unremarkable. Upper endoscopy was performed 4h after ingestion, as an attempt to remove the capsules while solid. However, the capsules were no longer identifiable, instead black adherent plaques of viscous material were seen, covering the fundus and gastric body (Fig. 1a). An attempt to dissolve the material with milk was made, which was unsuccessful (Fig. 1b). The patient was admitted to our department and remained asymptomatic without evidence

of systemic complications. Clear liquid diet was briefly started and she remained without dysphagia and good tolerance to progressively more solid oral intake. She was discharged one week after the ingestion, asymptomatic. A follow-up endoscopy was proposed but the patient refused the procedure and requested to be discharged from Gastroenterology outpatient consultation, as she did claim not having any symptoms.

Potassium permanganate is an anti-septic agent with strong oxidizing properties, most often used in dermal baths [1]. It is a water soluble crystal that, when in contact with tissue, causes cellular destruction with liquefaction necrosis [2]. This effect results from the formation of a strong alkaline corrosive agent – potassium hydroxide [2]. Its ingestion can be fatal as a consequence as local and systemic lesions, with most of the deaths occurring because of airway edema and obstruction and hemorrhagic shock [1,2]. A typical sign of potassium permanganate crystal ingestion is discoloration and edema of oral cavity [2]. The mainstream approach after every caustic ingestion is airway management [2,3]. An upper endoscopy is advised during the

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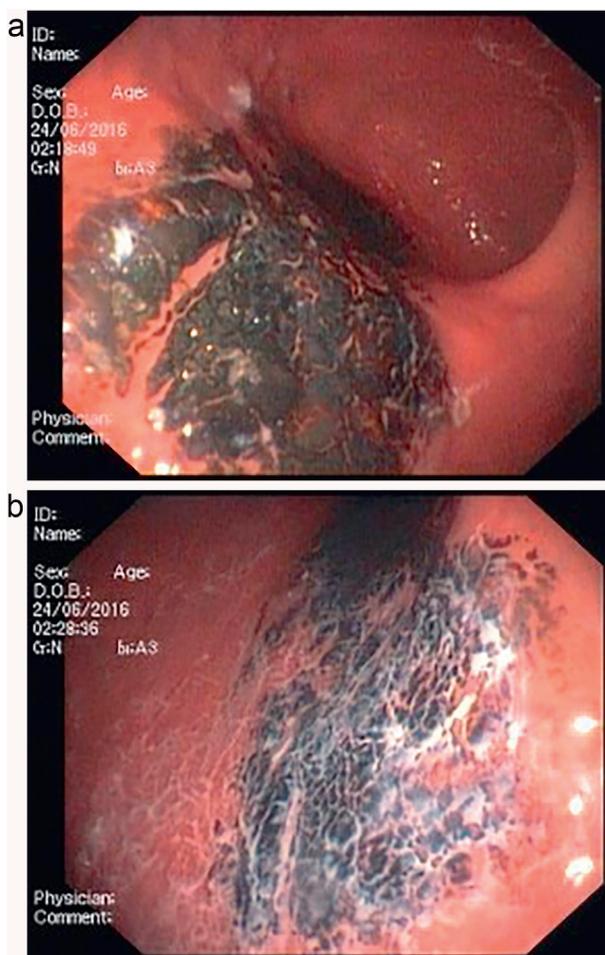


Figure 1 a: upper endoscopy showing black adherent plaques of viscous material covering the fundus and gastric body; b: an attempt to dissolve the material with milk was made, which was unsuccessful.

first 12 to 48 h to access the extension of gastroesophageal damage [3]. No antidote is known to specifically neutralize potassium permanganate, gastric lavage is not recommended because it can cause more damage and perforation, and charcoal administration is controversial [1]. Milk and egg ingestion have been named as potential neutralizing agents after potassium permanganate ingestion, and its administration has been suggested, once airway is secured [4].

Disclosure of interest

The authors declare that they have no competing interest.

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