Caustic esophageal injury by impaction of cell batteries

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INTRODUCTION

The ingestion of cell batteries can cause serious complications (fistula, perforation or stenosis) at the esophageal level (1).

The damage starts soon after ingestion (approximately 2 hours) and is directly related to the amount of time the battery is lodged in said location, the amount of electrical charge remaining in the battery, and the size of the battery itself. Injury is produced by the combination of electrochemical and chemical mechanisms and pressure necrosis. The ingestion of multiple cells and a size ≥ 20 mm are related with more severe and clinically significant outcomes (2,3).

CASE REPORT

A 39 year-old female patient, with a history of previous suicide attempts, was admitted to the Emergency Room with chest pain and dysphagia after voluntary ingestion of two cell batteries. Two cell batteries are easily detected in a routine chest x-ray, presenting a characteristic double-ring shadow, or peripheral halo (Fig. 1).

Urgent oral endoscopy was performed 10 hours after ingestion, showing a greenish-gray lumpy magma-like consistency due to leakage of battery contents (Fig. 2A). The two batteries were sequentially removed with alligator-jaw forceps (Fig. 2B). After flushing and aspiration of the chemical material, a broad and circumferential injury with denudation of the mucosa and two deep ulcerations with necrosis were observed where the batteries had been (Fig. 2C). The batteries’ seals were eroded, releasing chemical contents (Fig. 3). Despite the severity of the injuries, the patient progressed favorably and there was no esophageal perforation. Esophageal impaction of cell batteries should always be considered as an endoscopic urgency.

Fig. 1. Characteristic double-ring shadow, or peripheral halo on chest X-ray.

Fig. 2. Greenish-gray lumpy magma-like consistency (A). Cell batteries removed with alligator-jaw forceps (B). Mucosal denudation and deep ulcerations (C).
Fig. 3. Batteries’ seals eroded, releasing chemical contents.

REFERENCES

