LETTER TO EDITOR (VIEWERS CHOICE)

BUTTON BATTERY IN OESOPHAGUS: AN EMERGENCY

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A four years old girl presented with a history of button battery ingestion 6 hours back. Patient had tachycardia and was complaining of chest pain and dysphagia. X-ray chest revealed a 2.5 cm diameter radio-opaque round object in the lower oesophagus (Fig. 1). An urgent esophageoscopy was performed 1 hour after admission. Esophageoscopy showed an impacted lithium battery 14 cm from the incisor teeth, with a 3rd degree ulcerative esophagitis. Button battery was removed. As esophageoscopy was showing significant ulcerative changes. Bronchoscopy was done to rule out tracheoesophageal fistula which was normal. Nasogastric tube was inserted under guidance for feeding. Post-operative medical therapy included nasogastric feeding, administration of intravenous antibiotic therapy and antacids. Esophagogram done after 1 week was showing normal contour of oesophagus. Oral feeds were started after that. Flexible esophageoscopy after 6 weeks was showing scarred mucosa involving the one third of circumference of lumen but patient was asymptomatic.

Figure 1- X-ray showing foreign body in lower oesophagus.

Foreign body ingestion in children is a commonly encountered problem. Though coins are still the most common foreign bodies swallowed in children, ingestion of batteries is becoming more frequent in recent years due to the increasing accessibility to electronic toys and devices by children. Generally, batteries pass easily through the upper gastrointestinal tract and are eliminated in the stools in a few days. However, especially in little children, batteries with a 20 mm or larger diameter can be impacted in the oesophagus and cause local damage by leaking alkaline content causing liquefactive necrosis, electrical discharge leading to low voltage burns, and pressure necrosis (1). Battery is an electrochemical cell, which is used to convert a chemical energy into electrical energy. It has two halves, connected in series by a conductive electrolyte containing anions and cations. There are two main types of batteries: disposable batteries and rechargeable batteries. In disposable batteries the active material may not return to their original form since chemical reaction is not fully reversible. Common types of disposable batteries include zinc-carbon, mercury-oxide, lithium compounds and alkaline batteries. In rechargeable batteries, recharge current reverses the chemical reaction that occurs during its use. These include nickel-cadmium, nickel-zinc, nickel metal - hydrite and lithium ion. Batteries come in different shapes: cylindrical cell, button cell and coin cell. (2) Liquefaction necrosis and perforation can occur as soon as 4 to 6 hours after a disk battery is lodged in the oesophagus. (3,4) Size of battery and site of impaction is important in case of battery ingestion. Once lodged in the stomach, most disk batteries pass through uneventfully. There is a need for public education and awareness among the physicians about the danger of button battery ingestions.

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