

# **Button Battery Ingestion in Children: What the Radiologist Must Know**

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**Purpose:** Published studies in the literature have shown an increasing morbidity and mortality from button battery ingestion in children. Button batteries lodged in the esophagus or nose are a true surgical emergency, unlike other foreign bodies. The radiologist may be the first to suggest the diagnosis from the radiographic appearance of the foreign object. The purpose of this study is to review the imaging findings of button battery ingestion in children including the radiographic appearance of button batteries, means of differentiating batteries from other foreign bodies, and the complications that can occur as a result of ingestion.

**Materials and Methods:** Our database was searched to identify patients with a button (or disc) battery ingestion between January 1998 and November 2010. Patient charts were reviewed to determine the age of the patient at diagnosis, if the ingestion was witnessed, symptoms at presentation, and complications. Images and reports were reviewed to determine the location of the battery and complications.

**Results:** 33 children who ingested button batteries were identified (mean age 3 years, range 0.7 – 11 years). On frontal radiographs, the batteries had a double contour while the lateral view demonstrated a beveled edge or step off. 21 (63%) ingested batteries had passed into the stomach or small or large bowel, 9 (27 %) were lodged in the esophagus and 3 (10 %) in the nose. Patients with witnessed ingestion presented immediately after ingestion without significant symptoms. The ingestion was unwitnessed in 9 patients and their clinical symptoms were nonspecific ranging from 1–6 days. Complications occurred with batteries lodged in the esophagus or nose and included tissue necrosis (n= 7), tracheoesophageal fistula formation (n=2), esophageal stricture (n=2), and vocal cord paralysis (n=1). In 4 cases, the outside radiologist or resident did not correctly identify the object as a button battery.

**Conclusions:** The radiologist must be aware of the appearance of button batteries. When there is suspicion for button battery ingestion, prompt removal is necessary to avoid complications.