

Button Battery Ingestion- Case Report and Review

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ABSTRACT

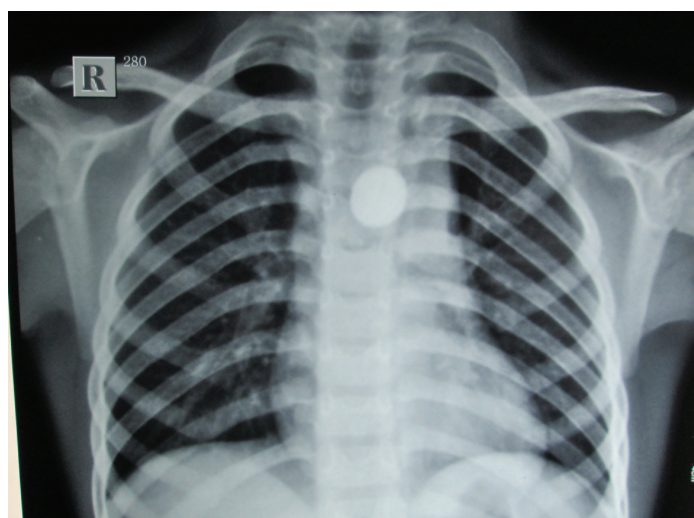
Over the last few years there is a rise in use of button batteries in various toys and other electronic gadgets. Easy availability and small size of these batteries pose a significant risk of ingestion in small children. Button battery ingestion can lead to serious health hazards very rapidly. A case of button battery ingestion is presented in this paper.

CASE REPORT

An 8-year-old mentally subnormal male child came with chief complaints of pain in abdomen and abnormal behaviour of one day duration. The pain in abdomen was acute in onset started in periumbilical region & radiating to back. It was associated with mild chest pain. There was no postural or diurnal variation, no history of vomiting, and no history of fever.

Parents gave history of abnormal behaviour by the child in the form of child not talking and flexion posturing and restlessness. He was not able to swallow food for which he was brought to the hospital by parents.

The general physical examination and systemic examination was normal. The child intermittently was having flexion posturing keeping his hands over abdomen and was restless in bed. The complete blood count was unremarkable. Chest x-ray showed presence of foreign body (round radio opaque shadow) at around T4 [Table/Fig-1]. The child was not giving any history of consumption of metallic object. Rigid esophagoscopy was performed. The esophagoscopy findings showed presence of round foreign body covered with sloughed mucosal tissue & was removed. Esophageal mucosal tissue was found to be ulcerated. The foreign body was 3V lithium button battery [Table/Fig-2]. Patient was started on Pantoprazole and Sucralfate. Recovery was uneventful. The patient was followed up or monitored for complications and stricture formation. After two months of regular follow up child is thriving well.



[Table/Fig-1]: Chest x-ray showed presence of foreign body

Keywords: Button battery, Ingestion

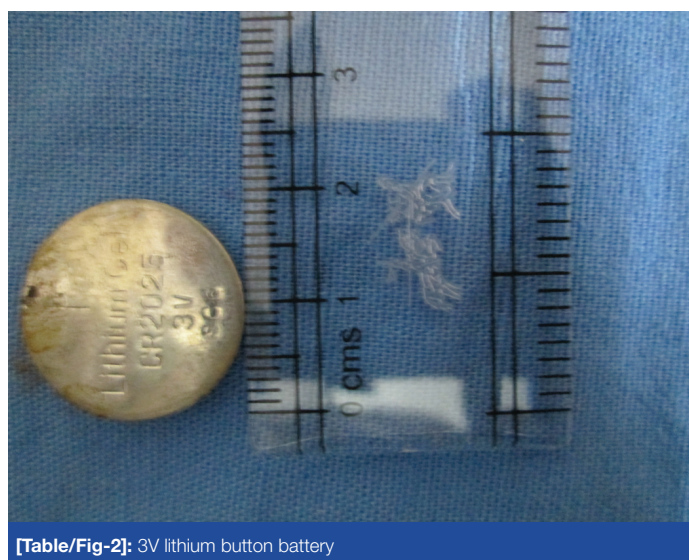
DISCUSSION

Children make 80% of patients that seek medical care after ingestion of foreign body with peak incidence of occurrence between 6mth & 3y of age [1]. At least 30% of children with esophageal foreign body will be asymptomatic, so any history of foreign body ingestion should be taken seriously & investigated [2]. A radiograph should be obtained in every case of acute onset of chest pain in children to rule out suspected coin or other radio-opaque foreign body ingestion particularly when ingestion is not observed. The esophageal coins or button batteries classically assumes enface appearance on antero-posterior view whereas lateral view will show edge of the coin. The coin will be viewed in opposite position if it is lodged in trachea.

The esophageal coins are commonly lodged in one of three locations. Upper esophageal sphincter(60-70%), mid esophagus at the level of aortic notch(10-20%), above Lower esophageal sphincter(20%) [3].

Recent data indicates growing incidence of button battery ingestion with 7-fold increase in incidence of ingestion associated with major or fatal outcome occurring in children less than 4 yrs of age [4].

To effectively mitigate injuries a multi-disciplinary national task force was established in America in 2012 and includes members from American Academy of Paediatrics(AAP), American Broncho-Esophagological Association (ABEA) and others. Few of the highlights of 2013 update of this task force are as follows.



[Table/Fig-2]: 3V lithium button battery

When looking at any round, opaque foreign body on anterior-posterior x-ray, it is useful to zoom in & look for double ring or halo sign to distinguish it from a coin. Close inspection of imaging is important to quickly make the correct diagnosis. The negative or narrower part of the battery can help guide clinician to where the most severe tissue injury may occur & what potential complications should be considered in the patient [5].

The increased marketing & use of lithium coin cells especially the 20mm diameter cell, is responsible for increase in cases of button battery ingestion. Currently, all severe button battery ingestion cases involve lithium cells. An alarming 12.6% of children younger than 6y who ingested 20mm diameter lithium coin cell experienced a major effect such as perforation, trachea-esophageal fistula, fistulization into major vessel, esophageal stricture, vocal cord paralysis, or spondylodiscitis [5].

If the patient is symptomatic but there is no ingestion history then consider battery ingestion if there is airway obstruction or wheezing, drooling, vomiting, chest discomfort, difficulty in swallowing, decreased appetite, refusal to eat, coughing choking, gagging with eating or drinking [5].

Complications of button battery lodged in esophagus include mucosal burns, perforations, stricture, vocal cord paralysis, formation of tracheo-esophageal fistula, major hemorrhage & death

[6]. Button batteries in particular can induce mucosal injury in as little as one hour of contact time & involve all esophageal layers in 4hr [2] hence need expedient removal by endoscopy.

Cases of Button battery ingestion are on rise even in India also. R Banerjee et al have reported that there was evidence of esophageal mucosal ulceration within 48h of ingestion of button battery [6].

CONCLUSION

The present case though not in typical age group for foreign bodies, it was suspected because of mental subnormality and acute onset of atypical symptoms. This child had developed sloughing of esophageal mucosa & ulceration within 48h of ingestion.

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