

MEETING ABSTRACT

Open Access

Disk battery ingestion: high clinic risk

Pasquale Di Pietro^{1*}, Silvia Vignola², Salvatore Renna¹, Emanuela Piccotti¹, Arrigo Vittorio Barabino²

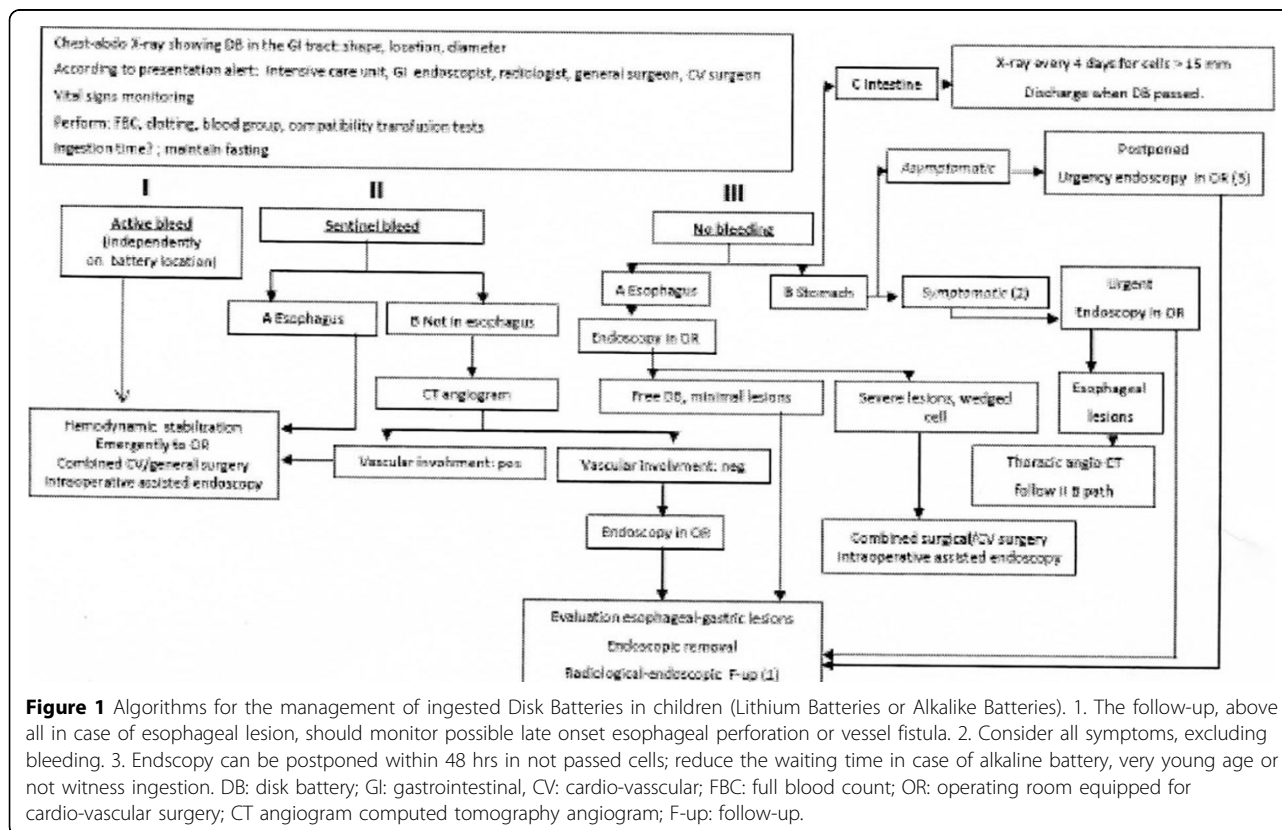
From 71st Congress of the Italian Society of Pediatrics. Joint National Meeting SIP, SIMGePeD, Study Group on Pediatric Ultrasound, SUP Study Group on Hypertension Rome, Italy. 4-6 June 2015

Over the last ten years disk battery (DB) ingestion have been increasing in children with serious consequences due to the diffusion of lithium battery (LB) that may cause catastrophic damages when lodged in the esophagus.

The severity of injury depends on cell type, size, voltage, location and time of contact with the mucosa

because electrical generation of hydroxide ions at the negative pole, leakage of alkaline content in stomach and mechanical pressure.

Because LB are larger (> 20 mm), flatter and have an higher voltage (3V) than alkaline DB (1.5 V) in small children their ingestion increases the risk of esophageal lodgment and tissue damage in just two hours [1,2].



* Correspondence: pasqualedipietro@ospedale-gaslini.ge.it
¹Emergency Medicine, G. Gaslini Institute, Genoa 16147, Italy
Full list of author information is available at the end of the article

DB ingestion is not witnessed in 92% of fatal outcomes and 56% of major complications; 36% of patients with esophageal lodgment are initially asymptomatic [3]. Clinical presentation can be variable from absence of symptoms to drooling, dysphagia, vomiting, chest pain, or dyspnea, fever, abdominal pain, irritability and feeding refusal and sudden fatal exsanguination for a fistula between esophagus and mediastinic vessels [3,4]. Other complications are trachea-esophageal fistula, laryngeal/esophageal stenosis, esophageal perforation, vocal cord paralysis, tracheomalacia, aspiration pneumonia, empyema, lung abscess, and spondylodiscitis [2]. Complications can be delayed, as the mucosal lesions may worsen also after DB removal. Plain chest and abdomen X-ray have a primary role to address the diagnosis and locate DB, revealed by the double ring or “halo” effect.

A “sentinel bleed”, isolated hematemesis/melena occurring hours or days before a fatal hemorrhage, is another atypical presenting symptom [4]. Exsanguination can occur with the DB still in the GI tract or until 28 days after its removal [1,2].

We propose a new protocol for DB ingestion management in children and stress the necessity of prevention with public awareness campaigns promoted by scientific Societies and preventive information addressed to parents and caregivers [3].

Authors' details

¹Emergency Medicine, G. Gaslini Institute, Genoa 16147, Italy.

²Gastroenterology and Digestive Endoscopy Unit, G. Gaslini Institute, Genoa 16147, Italy.

Published: 30 September 2015

References

1. National Capital Poison Center; <http://www.poisson.org/battery/fatalcases.asp>.
2. Litovitz T: Preventing battery ingestions: an analysis of 8648 cases. *Pediatrics* 2010, **125**:1178-83.
3. Litovitz T: Emerging battery ingestion hazard: clinical implications. *Pediatrics* 2010, **125**:1168-77.
4. Brumbaugh DE: Management of button battery-induced hemorrhage in children. *J Pediatr Gastroenterol Nutr* 2011, **52**:585-9.

doi:10.1186/1824-7288-41-S2-A27

Cite this article as: Di Pietro et al.: Disk battery ingestion: high clinic risk. *Italian Journal of Pediatrics* 2015 **41**(Suppl 2):A27.

Submit your next manuscript to BioMed Central
and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit

