KIDS NTS

Button Battery Ingestion

Refer EARLY to KIDSNTS for advice - 0300 200 1100

BACKGROUND

- Button batteries are common in many household items and among the most frequently ingested items requiring hospital admission in children.
- Saliva and oesophageal tissue allow current to flow between the positive and negative poles of the battery in an electrolytic reaction. The sodium hydroxide that forms at the negative pole is a strong alkali and causes chemical burns. This can result in erosion through the oesophagus into the surrounding structures such as the trachea, bronchi, lungs, pleural cavity and aorta.
- Damage can occur within 2 hours of ingestion although life threatening haemorrhage can occur up to 28 days later, even if the battery has been removed.
- Risk factors for injury include; oesophageal location (and above), size (lower risk if <12mm, higher if >20mm), prolonged mucosal contact and younger age (<6 years), coingestion with magnets.
- The risk of injury is low after the battery has passed into the stomach and beyond.
- History gathered from the parents/guardian should include; description of the battery (with uningested batteries obtained if possible), number of batteries ingested, time of ingestion and history of oesophageal disease/surgery

A BATTERY LODGED IN THE OESOPHAGUS IS A MEDICAL EMERGENCY EVEN IF ASYMPTOMATIC!
There is a risk of death or serious harm from delays in recognising and treating ingestion of button batteries.

SUSPECT BUTTON BATTERY IF:

- Symptomatic patient with no history of ingestion (20-40% of presentations).
- Unexplained airway compromise; stridor, wheezing or 'noisy' breathing, drooling, coughing.
- Decreased appetite, vomiting, gagging, choking.
- Abdominal or chest pain or discomfort.
- Presumed "Coin" Ingestion or other foreign body.
- Unexplained GI bleed in a child < 6yrs of age or with learning difficulties.

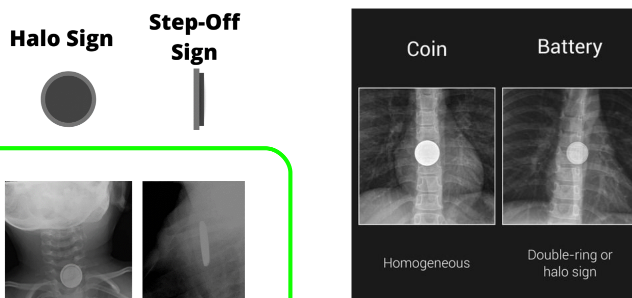
INGESTION CONFIRMED OR SUSPECTED:

- Maintain airway, breathing and circulation
- NIL BY MOUTH
- Resuscitate as necessary
- **Involve paediatric and critical care teams *early***

Two-view plain x-ray (anteroposterior and lateral) focusing on neck, chest and abdomen to determine location

If ingestion occurred LESS than 12 hours ago;
From time of x-ray until removal can **consider** the following **(but only if it does NOT delay removal or transfer):**
>1 year give 10 mls honey every 10 mins (max 6 doses)
OR
Any age give 1 gram sucralfate oral suspension every 10 mins (max 3 doses)

Look for 'Halo sign' to differentiate between a coin and a battery, HOWEVER, if in doubt assume it is a battery.



OESOPHAGEAL or above CLAVICLES
REQUIRES URGENT TRANSFER FOR REMOVAL
This is a TIME CRITICAL EMERGENCY!

- Contact KIDSNTS on 0300 200 1100 immediately!
- KIDSNTS will conference speciality teams at BCH - General Surgical +/- ENT
- Local team to Contact emergency ambulance service via 999 stating 'Paediatric **TIME CRITICAL TRANSFER**'
- Support anaesthetic team with appropriate staff.
- KIDSNTS will arrange appropriate bed or alert BCH ED if no bed available

BELOW the DIAPHRAGM

- Contact BCH surgical team immediately
- Surgical team may suggest a follow-up XR within 24-48h to check the battery's progress.
- Parents / Guardians should be advised to return urgently if the child develops signs of bleeding or obstruction.

BEWARE - Symptoms may develop up to 28 days after a button battery has been removed or passed in stool

Mubarak, Amani; Benninga, Marc A.; Broekaert, Ilse; Dolinsek, Jernej; Homan, Matjaž; Mas, Emmanuel; Miele, Erasmo; Pienar, Corina; Thapar, Nikhil; Thomson, Mike; Tzivinikos, Christos; de Ridder, Lissy. Diagnosis, Management, and Prevention of Button Battery Ingestion in Childhood: A European Society for Paediatric Gastroenterology Hepatology and Nutrition Position Paper. Journal of Pediatric Gastroenterology and Nutrition 73(1):p 129-136, July 2021. | DOI: 10.1097/MPG.0000000000003048

KIDS Clinical guideline for button battery ingestion V.1.0.3 JM & SR.
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