

INCLUSION CRITERIA

- Concern for button battery foreign body.

EXCLUSION CRITERIA

- Non-button battery ingested foreign bodies.

MEASURES

- Time from ED arrival to OR arrival.
- Utilization of order set.
- Hospital length of stay.
- 48-hour return to ED.

CLINICAL GUIDANCE

- [IMG2169] – x-ray neck, chest, abdomen 2-view for ingested foreign body.
- Button battery order set.
- For patients aged 1-year and older: may consider honey as a substitute for sucralfate.

Initial Assessment: ED Triage

- Stabilize airway as necessary if signs of airway obstruction
- Utilize **Button Battery Order Set**
- Obtain foreign body x-ray series: X-Ray Neck, Chest, Abdomen 2-view for Ingested Foreign Body (**IMG2169**)
- Radiology Tech notify Radiologist when imaging is completed.
- Radiologist notify ED Attending of confirmed button Battery.
- Make patient NPO except medications.

Is the patient clinically stable?

No
(E.g., Hemoptysis, CV instability, prolonged duration of ingestion with button battery at level of aortic arch)

Confirmed button battery in trachea?

Yes

No

Emergent Removal in OR

- Immediately notify ED Attending.
- Immediately call ENT, GI, & Gen. Surg.
- Ensure Cardiothoracic Surgery / ECMO available.
- Stabilize airway as necessary
- Consider placing PIV.
- Provide supplemental oxygen as needed.
- Keep child calm.

Emergent Removal in OR

- Immediately notify ED Attending.
- Immediately call ENT
- Stabilize airway as necessary
- Consider placing PIV.
- Provide supplemental oxygen as needed.
- Keep child calm.

Button battery location?

Esophagus, At or Above Clavicle

Esophagus, Fully Below Clavicle

Stomach or Post-Pyloric

ED Attending (or designee) to call **ENT Attending**, report to OR within 1-hour of notification.

ED Attending (or designee) to call **GI Attending**, report to OR within 1-hour of notification.

Consult GI

- Consult **GI** if button battery in stomach or beyond.

Notify OR

- ENT/GI Attending notify OR and surgical team of emergent case.

Notify & Report

- Anesthesia on-call notified of need for emergent case.
- Report to OR within 1-hour of notification.

Emergent Case

- Charge RN notified of need for emergent case.
- Charge RN notifies Nursing Supervisor and OR of need for emergent case.

ED Bedside Nurse

- Insert IV.
- Administer sucralfate if <12-hours since foreign body ingestion and can swallow liquids.
- Prepare for transfer to OR.

Transfer Patient to OR

- Transfer patient to OR within 1-hour of OR notifications for emergent removal

Disclaimer: The clinical pathways are based upon publicly available medical evidence and/or a consensus of medical practitioners at Nemours Children's Health ("Nemours") and are current at the time of publication. These clinical pathways are intended to be a guide for practitioners and may need to be adapted for each specific patient based on the practitioner's professional judgment, consideration of any unique circumstances, the needs of each patient and their family, and/or the availability of various resources at the health care institution where the patient is located.

VERSION MANAGEMENT

- Version 1.0 (10/29/25): Go Live.

Questions about this pathway should be directed to clinicalpathways@nemours.org.

AUTHORS & REFERENCES

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- Int J Pediatr Otorhinolaryngol. 2020 Dec;139:110397. doi: 10.1016/j.ijporl.2020.110397. Epub 2020 Sep 25.
- Laryngoscope Investig Otolaryngol. 2021 Apr 15;6(3):549-563. doi: 10.1002/lio2.535. eCollection 2021 Jun.
- Otolaryngol Clin North Am. 2024 Aug;57(4):623-633. doi: 10.1016/j.otc.2024.02.016. Epub 2024 Mar 21.
- Laryngoscope. 2023 Mar;133(3):689-693. doi: 10.1002/lary.30170. Epub 2022 May 11.
- Dig Liver Dis. 2020 Nov;52(11):1266-1281. doi: 10.1016/j.dld.2020.07.016. Epub 2020 Aug 8.
- Ear Nose Throat J. 2020 Jan;99(1):47-51. doi: 10.1177/0145561319839900. Epub 2019 Apr 11.
- Otolaryngol Clin North Am. 2019 Dec;52(6):1037-1048. doi: 10.1016/j.otc.2019.08.005. Epub 2019 Sep 11.
- Gastrointest Endosc Clin N Am. 2016 Jan;26(1):99-118. doi: 10.1016/j.giec.2015.08.003.
- JAMA Otolaryngol Head Neck Surg. 2021 Sep 1;147(9):787-796. doi: 10.1001/jamaoto.2021.1548.
- Radiol Clin North Am. 2017 Jul;55(4):845-867. doi: 10.1016/j.rcl.2017.02.012.
- Pediatr Clin North Am. 2017 Jun;64(3):507-524. doi: 10.1016/j.pcl.2017.01.004.
- BMC Pulm Med. 2017 Apr 13;17(1):61. doi: 10.1186/s12890-017-0406-6.
- Anesth Analg. 2020 Mar;130(3):665-672. doi: 10.1213/ANE.0000000000004029.
- Eur Ann Otorhinolaryngol Head Neck Dis. 2011 Nov;128(5):248-52. doi: 10.1016/j.anorl.2010.12.011. Epub 2011 Oct 20.
- Crit Rev Toxicol. 2019 Sep;49(8):637-669. doi: 10.1080/10408444.2019.1707773.
- J Pediatr Surg. 2020 Jan;55(1):176-181. doi: 10.1016/j.jpedsurg.2019.09.045. Epub 2019 Oct 25.
- Otolaryngol Head Neck Surg. 2024 Jan;170(1):1-12. doi: 10.1002/ohn.433. Epub 2023 Jul 20.
- Clin Toxicol (Phila). 2019 Nov;57(11):1053-1063. doi: 10.1080/15563650.2019.1618466. Epub 2019 May 27.
- Lancet. 2017 May 20;389(10083):2041-2052. doi: 10.1016/S0140-6736(16)30313-0. Epub 2016 Oct 26.
- Acta Paediatr. 2022 Jul;111(7):1301-1312. doi: 10.1111/apa.16351. Epub 2022 Apr 12.