

Investigation and Management of Ingested Foreign Bodies

Reference: 425
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Purpose

The ingestion of a foreign body or multiple foreign bodies is a common presenting complaint in paediatric surgery. Ingested foreign bodies rarely cause problems, however, if problems do occur, they can cause significant morbidity, for example, oesophageal rupture. The following guideline has been developed following multidisciplinary consensus agreement on current best-practice in the management of ingested foreign bodies.

Intended Audience

All clinicians involved in the initial management of an infant or child who has ingested a foreign body.

Dr Samantha Conroy, Junior Clinical Fellow Paediatric Surgery Review date: December 2021

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1. Introduction

The ingestion of a foreign body or multiple foreign bodies is a common presenting complaint in paediatric surgery, with a peak incidence from 12-24 months¹. Ingested foreign bodies rarely cause problems; almost 80% of patients pass the foreign body – without intervention – in seven days² (only 1% require surgical removal). However, occasionally foreign bodies can cause significant morbidity (for example, oesophageal rupture) and 1% require surgical removal².

The presenting symptoms and outcomes of an ingested foreign body is highly dependent on the swallowed object, and for this reason, the guidance for hazardous and non-hazardous foreign body ingestion has been divided accordingly.

2. Intended Audience

This guidance has been produced to enable all clinicians to use best practice, based on current evidence, in the initial management of an infant or child who has ingested a foreign body.

3. Guideline Content

- A. Defining hazardous foreign bodies
 - B. Special considerations for button battery ingestion
 - C. Considerations for upper third oesophageal FBs
 - D. Flow chart 1: Initial management of non-hazardous ingested foreign body
 - E. Flow chart 2: Initial management of ingested button battery
 - F. Flow chart 3: Initial management of magnet ingestion
 - G. Flow chart 4: Initial management of ingested sharp object or other hazardous foreign body
- A. It is difficult to define every ingested foreign body into hazardous and non-hazardous groups, however, we tend to classify hazardous objects as those that have the potential to cause significant harm. Most frequently, this includes:
1. Button batteries
 2. Multiple magnets
 3. Sharp objects
 4. Very large objects
 5. Filled balloons

B. Special considerations for button battery ingestion

All children who have swallowed a battery or if there is a suspicion of swallowing a battery (round metal object that wasn't clearly a coin) should have an PA CXR. If there is any uncertainty about the nature of the object then a lateral CXR should also be done. This allows for differentiation between battery and coin, and the 'step off' sign allows for identification of the negative electrode (slightly smaller in diameter), which is more likely to cause damage to adjacent tissues³.

If not visible on CXR, an AXR should be requested, as metal detectors are unreliable in button battery identification.

An oesophageal battery requires **immediate** referral to the Paediatric Surgeons. As battery burns can occur within two hours of ingestion³, it is essential to diagnose and remove batteries in the oesophagus immediately.

Once the button battery is in the stomach, the patient can be discharged if they are asymptomatic. Depending on the size of the battery and the age of the patient, there may be a need for the patient to return for a follow up XR. This is to ensure that the battery is progressing and not simply fragmenting in the stomach/adhering to the gastric mucosa.

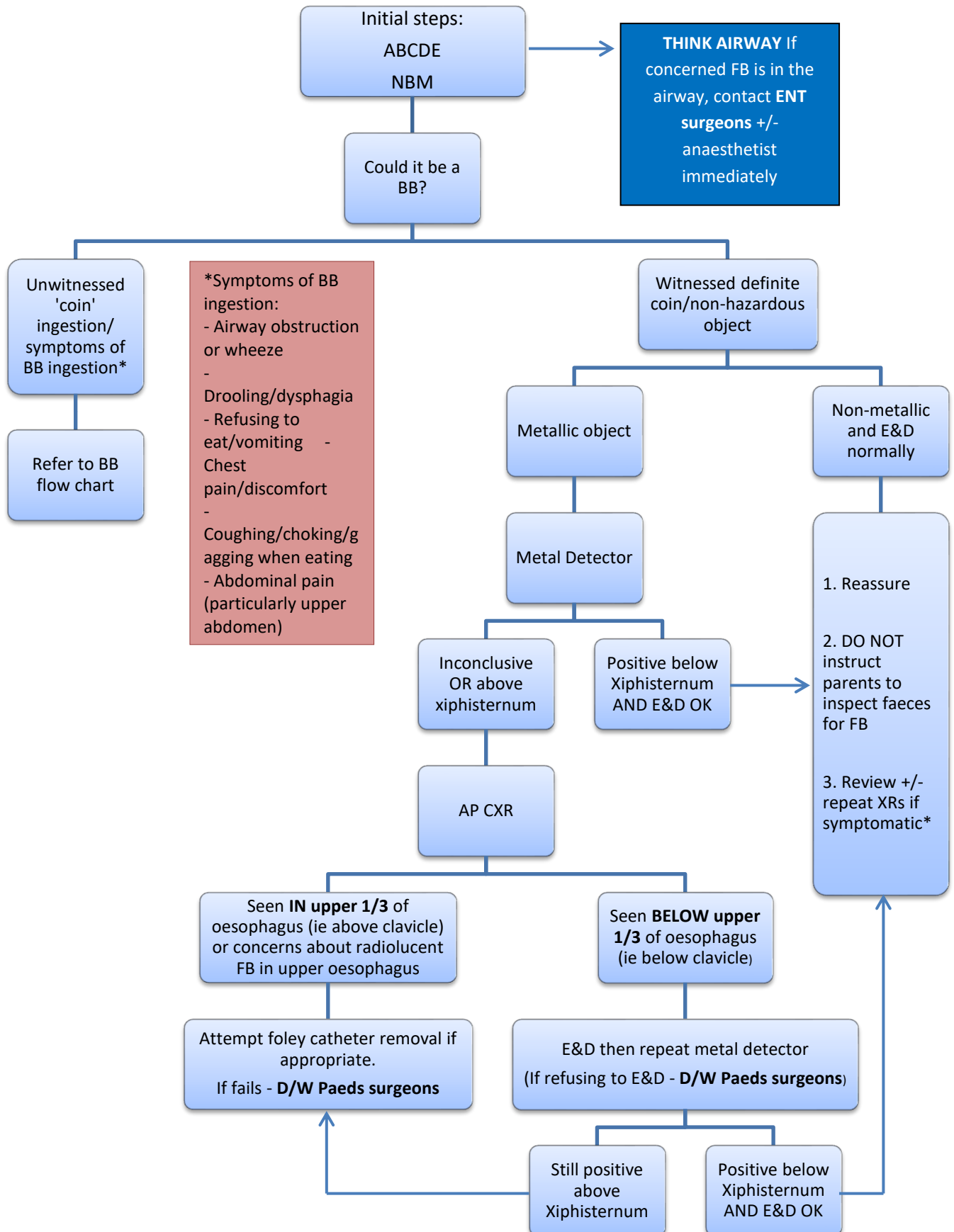
If in doubt at any stage, please discuss with the surgical registrar.

See section D for more details.

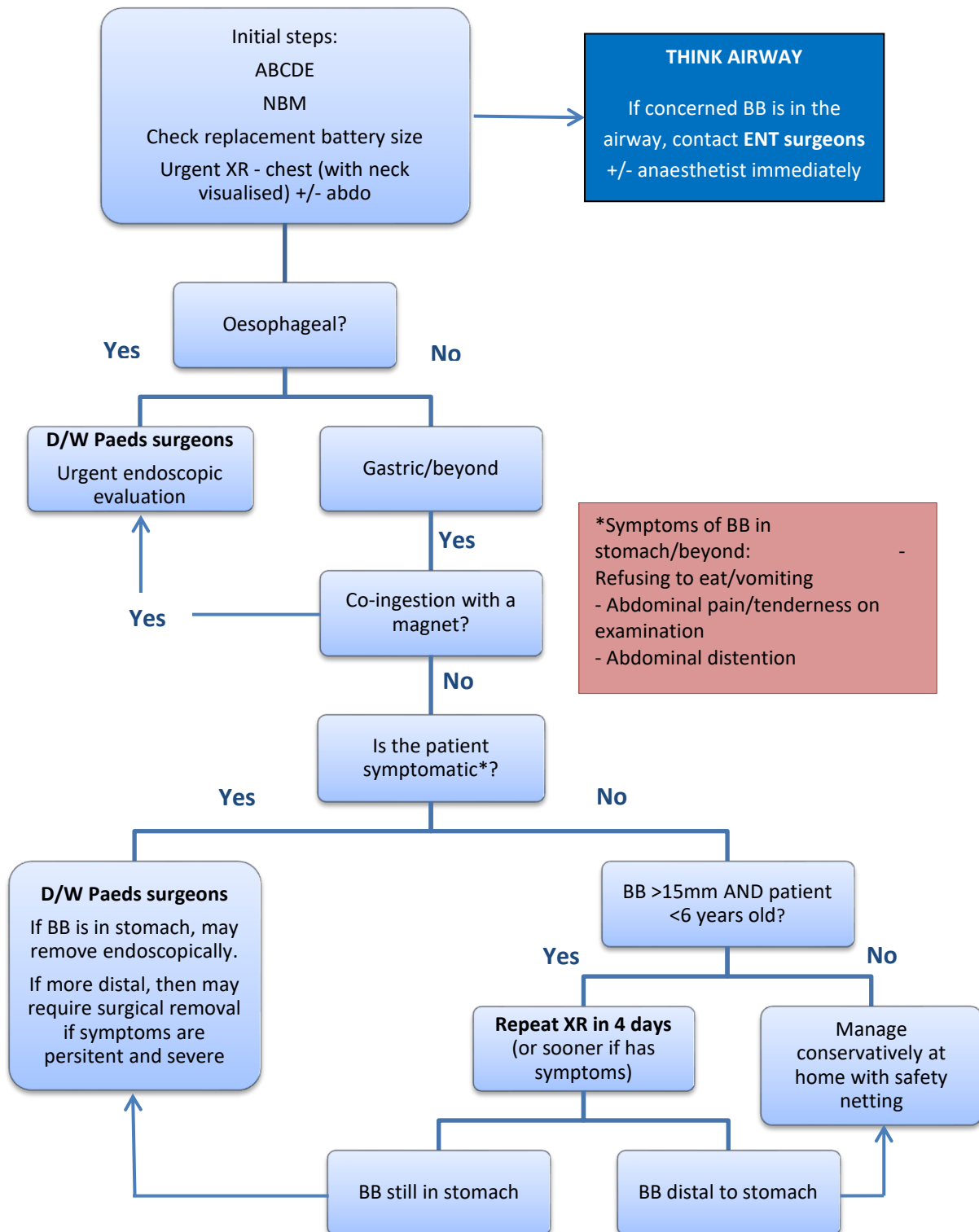
C. Things to consider for upper third oesophageal FBs

Upper third oesophageal FBs should be managed as per the guidelines below. If there are concerns about a patient's airway at any point, ENT +/- anaesthetic assessment should be sought immediately. In the case of upper third oesophageal FBs, the inter-departmental consensus (ED, paediatric surgery, ENT) is that if the patient requires rigid oesophagoscopy, the paediatric surgery consultants can discuss with the ENT consultants for their input (if required); if not, the patient would remain under paediatric surgery.

D. Flow chart 1: Initial management of non-hazardous ingested foreign body
(Adapted from 2015 PSU guideline 'swallowed foreign bodies'^{4, 5, 6})

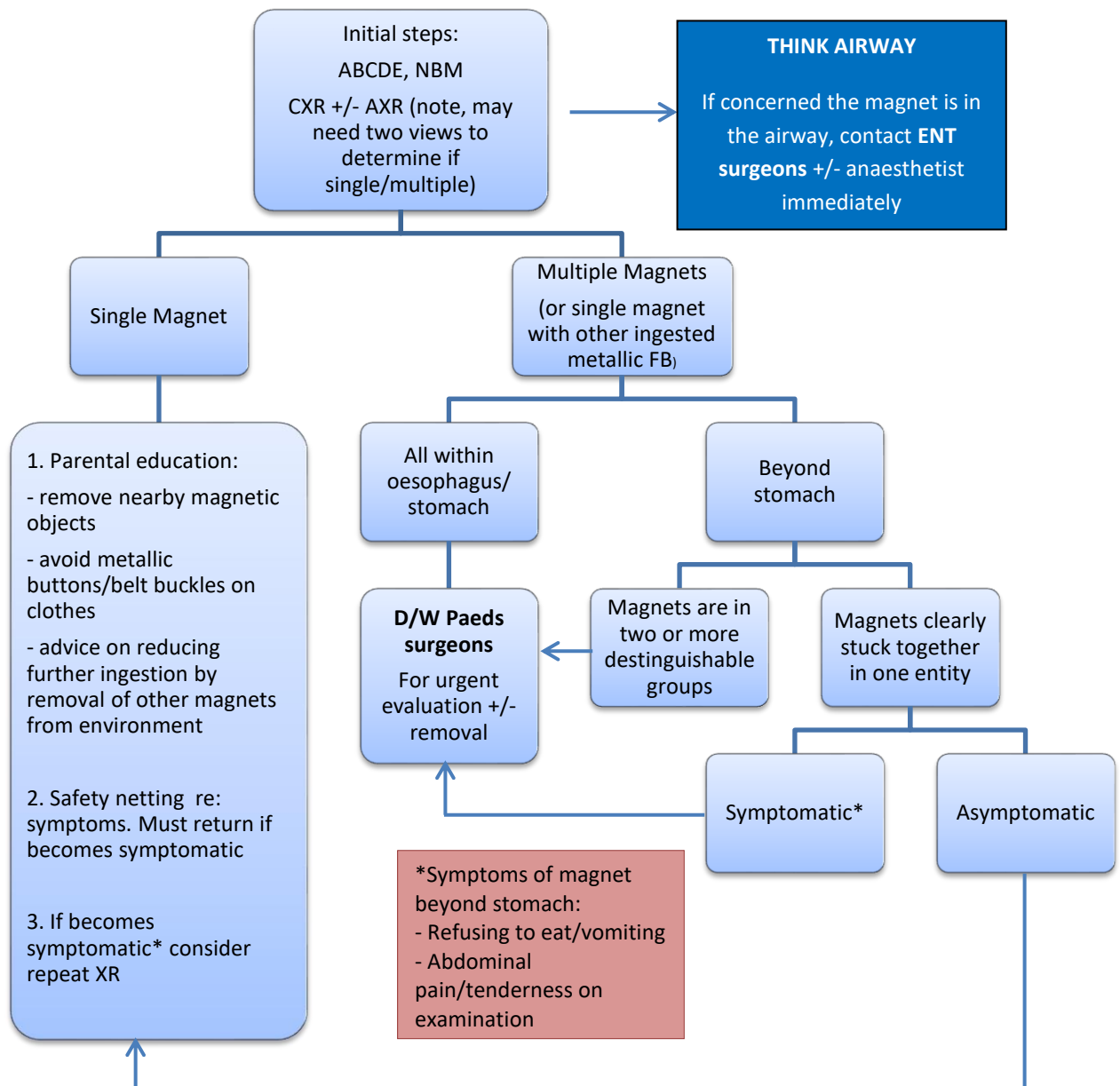


E. Flow chart 2: Initial management of ingested button battery



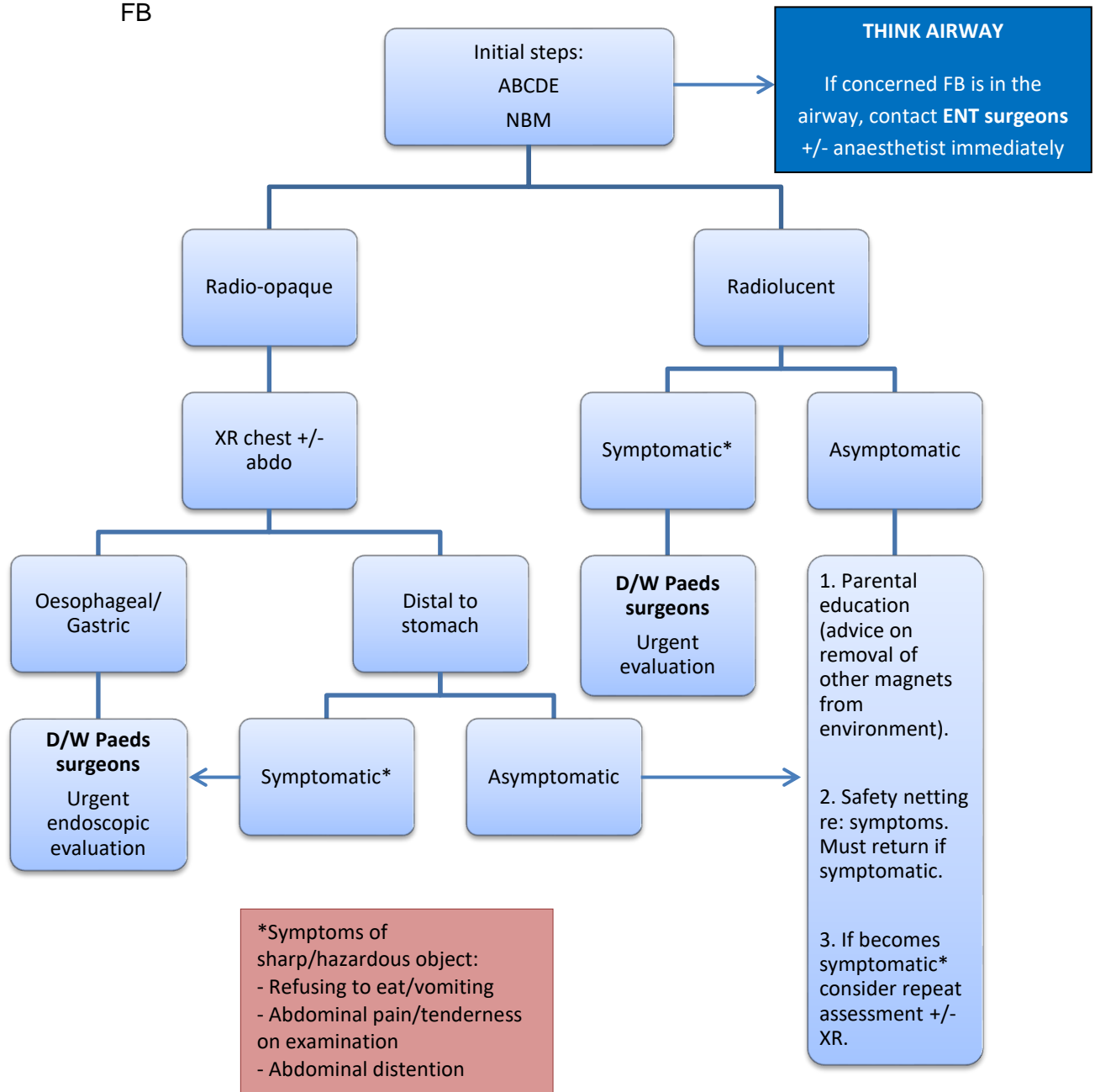
Adapted from Litovitz et. al (2010) and cross-referenced with the Poison.org. (2018) 'NBIH Button Battery Ingestion Triage and Treatment Guideline',^{3,7}

F. Flow chart 3: Initial management of magnet ingestion



Adapted from Kramer et. al (2018) report and proposed management algorithm for magnet ingestion in children⁸.

G. Flow chart 4: Initial management of ingested sharp object or other hazardous FB



Adapted from Kramer et. al (2018) report and proposed management algorithm for ingested sharp or pointed objects in children⁸.

4. References

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8. Kramer RE, e. (2018). Management of ingested foreign bodies in children: a clinical report of the NASPGHAN Endoscopy Committee. - PubMed - NCBI. [online] Ncbi.nlm.nih.gov. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/25611037> [Accessed 9 Jan. 2018].