



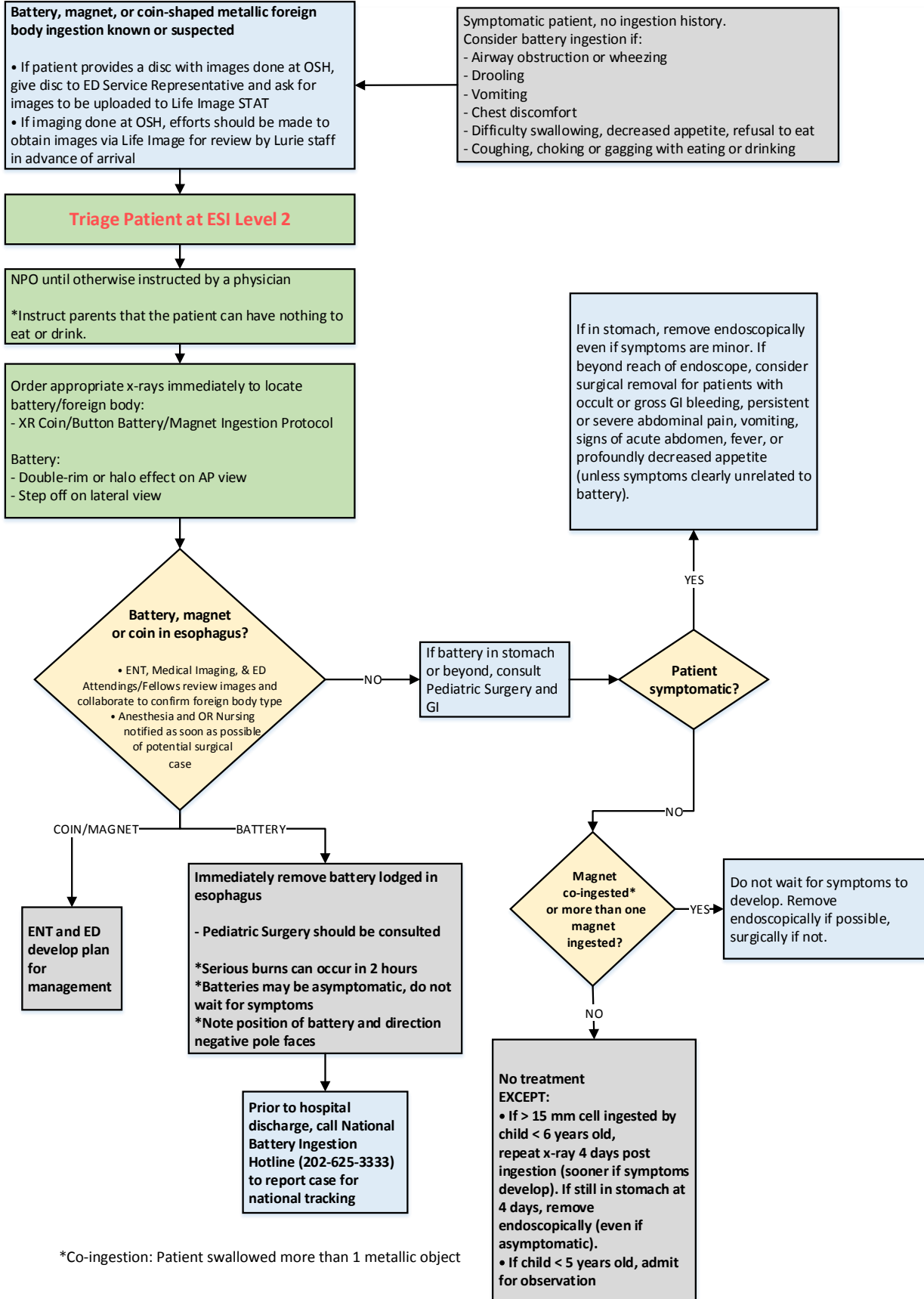
Tips, Pitfalls & Caveats:

• **3 "N's": Negative – Narrow – Necrotic.** The negative battery pole, identified as the narrowest side on lateral x-ray, causes the most severe, necrotic injury. The negative battery pole is the side opposite the "+" and without the imprint.

• 20 mm and larger lithium coin cells are most frequently involved in esophageal injuries; smaller cells lodge less frequently but may also cause serious injury or death.

Important Note:

After removal, if mucosal injury is present, observe for and anticipate delayed complications: tracheoesophageal fistula, esophageal perforation, mediastinitis, vocal cord paralysis, tracheal stenosis or tracheomalacia, aspiration pneumonia, empyema, lung abscess, pneumothorax, spondylodiscitis or exsanguination from perforation into a large blood vessel. Anticipate specific complications based on injury location, battery position and orientation (negative pole). Determine length of observation, duration of esophageal rest, need for serial imaging or endoscopy/bronchoscopy based on severity and location of injury. Monitor patients at risk for perforation into vessels as inpatients. Intervene early to prevent fatality. Monitor for respiratory symptoms, especially those associated with swallowing, to diagnose TE fistulas early. Expect presentation of perforations and fistulas to be delayed for up to 18 days after battery removal and esophageal strictures weeks to months afterwards.





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