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## Foreign body aspiration and ingestion in children in a Swiss tertiary pediatric emergency department

### A retrospective, observational study

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**Background** Ingestion and aspiration of foreign bodies (FB) is a common problem in the pediatric emergency department (PED) and can be fatal. We aimed to analyse the occurrence of FB ingestion and aspiration in a Swiss tertiary PED.

**Methods** We conducted a chart review of all children ≤16 years with FB aspiration or ingestion seen in our PED from August 2013 to January 2016.

**Results** Ingestion occurred in 147 (23 non-accidental) and aspiration in 42 patients, respectively; 97 males (56%) and 77 females (44%) aged 15 days to 15 years (mean=4.5 years). The majority of incidents occurred in children 0-3 years of age (n=108, 62%), whereas intentional intake was seen in children ≥12 years only. Causative agents for ingestion included undrinkable liquids (n=23), magnets (n=11), coins (n=11), batteries (n=8); and jewellery (n=8), apples (n=10), nuts (n=5), carrots (n=4) and other (n=23) for aspiration, respectively. Symptoms from ingestion included vomiting (n=27, 18%), retching (n=21, 14%), dysphagia (n=26, 18%), hypersalivation (n=11, 7%) or none (n=58, 44%); those from aspiration included cough (n=31, 74%), retching (n=10, 24%), respiratory distress (n=23, 55%), cyanosis (n=5, 12%) and only 2 patients were asymptomatic. Chest or abdominal X-ray was required in 46 subjects (31%) with ingestion and in 16 (38%) with aspiration, in each case; upper gastrointestinal tract fluoroscopy in 6 (14%). Fiberoptic laryngoscopy was performed in 6 patients, however, without location of a FB in any child. 10 subjects underwent surgical removal of oesophageal FB in 10 (7%), 16 (25%) gastroscopy to pick magnets (n=4), glass shards (n=1) and yew needles (n=13); secondary laparotomy was required in 2 cases and bronchoscopy was indicated in 24 (57%); but, in only 9 subjects a FB was removed (right lung (n=6), left lung (n=2), trachea (n=1)). Prolonged clinical

observation > 6h was needed in 66 of all FB cases (35%); complications occurred in only 3 ingestions (oesophageal corrosion n=2, small intestine necrosis, n=1) and one aspiration (acute respiratory distress syndrome (ARDS) with pneumothorax).

**Conclusion** Aspiration and ingestion of FB remains a frequent presenting problem, especially in children aged 0-3 years. We suggest, physicians should be aware of the most dangerous objects and their sequelae, such as ingestion of several magnets or battery in the oesophagus. Then management requires urgent specialty expertise to ensure quick removal and thus, prevent serious complication.