An unusual case of an oesophageal foreign body presenting as torticollis

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ABSTRACT

Oesophageal foreign bodies (FBs) are commonly encountered in an otolaryngology setting. The majority of such cases remain in the paediatric population, where obtaining an accurate history of events is challenging. Oesophageal FBs present in a variety of ways other than dysphagia, which may result in delayed presentation, diagnosis and subsequent treatment. Where an ingested FB is a battery, early removal is advocated owing to the potential for significant complications, a problem highlighted by a patient safety alert issued by NHS England. A common paediatric presentation, torticollis has a multitude of potential underlying causes. We present an unusual case of torticollis in a two-year old girl, subsequently revealed to be caused by an ingested button battery.

KEYWORDS

Foreign body – Button battery – Torticollis – Oesophagus

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Case history

A two-year old girl presented to the emergency department with a five-week history of coryzal symptoms, anorexia, fever and diminished oral intake (fluids and solids). Her parents had reported generalised malaise within the preceding three weeks, resulting in a solitary attendance to the emergency department. Her symptoms were attributed to a viral upper respiratory tract infection and she was discharged without admission. Following admission on re-presentation, medical management was instigated with intravenous fluids, antibiotics and analgesia. She was then assessed by the otolaryngology team owing to the presence of localised reactive lymphadenopathy. She was noted in particular to have pain on neck movements with a reluctance to lie down flat, preferring instead to remain sitting upright. She was not drooling. Computed tomography of her neck was requested because of the significant degree of torticollis and restricted movement.

Initial imaging showed no underlying cause for the torticollis. However, concerns regarding the possibility of a thoracic pathology resulted in the imaging being extended to include the thorax. The subsequently acquired imaging revealed the presence of a metal foreign body (FB) in the midoesophagus, suggestive of a coin. In addition, it demonstrated partial collapse of the T3 and T4 vertebral bodies with acute discitis (Figs 1 and 2).

The child was therefore transferred to a tertiary paediatric referral centre under the care of both general and neurosurgical teams, and expedited to theatre. Intraoperatively, a button battery was discovered 8cm proximal to the gastro-oesophageal junction. On removal, mucosal ulceration and granulation was noted around the site of impaction, and a nasogastric tube was inserted. Magnetic resonance imaging (MRI) was undertaken ten days later, revealing persistent abnormality within the T3 and T4 vertebral bodies, loss of height and abnormal enhancement. There was no associated spinal cord compression but there was enhancement of the posterior vertebral ligament from C7 to T6 and posterior mediastinal tissues with thickening of the oesophagus (Fig 3).

Management with intravenous antibiotics continued for a further four weeks and MRI at this point showed improvement albeit with persisting oesophageal thickening. During the 12 months following surgery, the patient required multiple oesophageal dilations as a result of localised tissue damage and subsequent scarring, the first of these procedures taking place after four months.

Discussion

Batteries account for less than 2% of FBs in children.¹ It can take as little as 2.5 hours for mucosal damage to

Figure 1 Axial computed tomography demonstrating the presence of a foreign body

Figure 3 T1 and T2 weighted magnetic resonance imaging demonstrating persistent abnormality of vertebral bodies and intervertebral discs

occur.² Symptoms of ingestion may range from none to dysphagia and emesis.¹ Although the vast majority of patients with an ingested FB are reviewed within hours of ingestion or earlier, delayed presentation is not uncommon. Clinicians should always be aware of the possibility of an ingested FB being a button battery, and this must be excluded by means of a meticulous history and examination.

Contrary to common assumption, localised tissue damage is secondary to the build-up of caustic soda (sodium hydroxide) as a result of the discharged current from the

battery rather than leakage of contents.⁵ Localised tissue burns, most often in the oesophagus, may either result in a catastrophic haemorrhage due to erosion of blood vessels or airway compromise due to mass oedematous/inflammatory changes. Other complications may include a stricture, a tracheo-oesophageal fistula, mediastinitis and perforation of the aorta.⁴

Such is the importance of early identification that NHS England issued a patient safety alert in 2014 to highlight the serious repercussions of ingesting a button battery.³ Five paediatric cases were reported over a four-year period, of which one child died. In all cases, severe tissue damage was attributed to significant delays in the assessment and subsequent management of patients who had ingested a button battery. Despite the concerns highlighted, global consensus remains an area of deficiency, particularly in the field of otolaryngology. Currently, only locally implemented assessment and management recommendations exist, with significant variations from the algorithm suggested by Litovitz *et al.*² The catastrophic sequelae of button battery ingestion in particular demonstrate the importance of standardising an assessment and management protocol for use by all hospital emergency departments when encountering patients who may have ingested a button battery.

The presenting symptom in our case was torticollis, an abnormal position of the head characterised by rotation of the cervical spine with associated tilting of the head,⁵ not uncommonly encountered in paediatric practice. The condition may be congenital (due to an abnormality of the sternocleidomastoid muscle) or acquired. Causes of acquired torticollis can include the following broad categories: infectious, musculoskeletal, ophthalmic, neurological and neoplastic. A study published in 2015 of 20 children presenting with torticollis revealed a wide range of pathologies including neurological neoplasia, granulomas and cysts, spinal cord anomalies, congenital cataracts and microphthalmia, deep neck space infections and Sandifer syndrome.⁶

Figure 2 Sagittal computed tomography demonstrating involvement of thoracic vertebral bodies

Conclusions

We encourage clinicians to undertake a comprehensive assessment to achieve early diagnosis. Furthermore, based on our own experience and recent recommendations by NHS England, we advocate the addition of FBs (notably button batteries) to the aforementioned list of possible causes of torticollis.

References

1. Fuentes S, Cano I, Benavent MI, Gómez A. Severe esophageal injuries caused by accidental button battery ingestion in children. *J Emerg Trauma Shock* 2014; **7**: 316–321.
2. Litovitz T, Whitaker N, Clark L *et al*. Emerging battery-ingestion hazard: clinical implications. *Pediatrics* 2010; **125**: 1,168–1,177.
3. NHS England. *Stage One: Warning – Risk of Death and Serious Harm from Delays in Recognising and Treating Ingestion of Button Batteries*. Leeds: NHS England; 2014.
4. Banerjee R, Rao GV, Sriram PV *et al*. Button battery ingestion. *Indian J Pediatr* 2005; **72**: 173–174.
5. Haque S, Bilal Shafi BB, Kaleem M. Imaging of torticollis in children. *Radiographics* 2012; **32**: 557–571.
6. Tumturk A, Kaya Ozcora G, Kacar Bayram A *et al*. Torticollis in children: an alert symptom not to be turned away. *Childs Nerv Syst* 2015; **31**: 1,461–1,470.