An unexpected cause of chronic cough and widened mediastinum on chest radiograph

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A 19-year-old male with Mowat Wilson syndrome (a rare genetic disorder characterised by intellectual disability, psychomotor impairment and distinctive facial features[1]) was referred by his general practitioner to secondary care for urgent assessment of a persistent dry cough and widened mediastinum on chest radiograph.

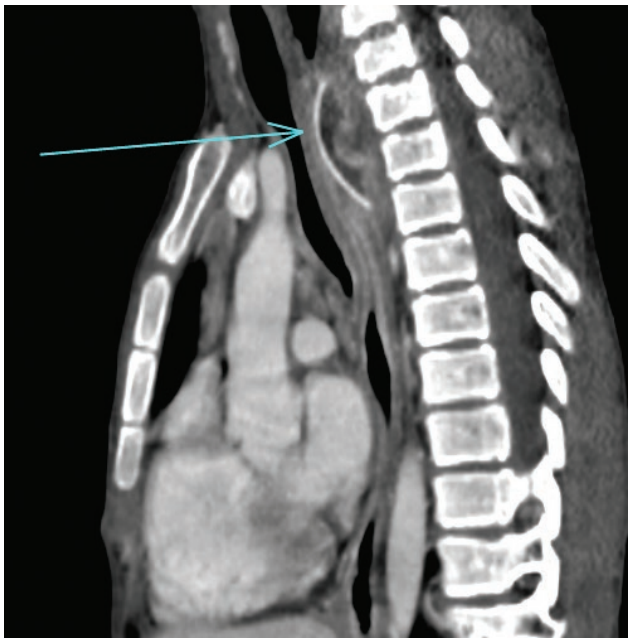
Initially an urgent computed tomography (CT) scan of his thorax was undertaken; unfortunately, as the images were degraded by movement and breathing artefact, this investigation was non-diagnostic. He was subsequently reviewed at the local respiratory clinic. As the patient was not able to communicate verbally, the clinical history was obtained from his parents.

His parents described paroxysms of non-productive cough, worse at mealtimes and when lying flat. His cough had started abruptly, had persisted for three months and had not improved following trial of antireflux therapy and antibiotics. They also commented that he had foul smelling breath after eructation but had been well otherwise. After further prompting, they recounted an incident several weeks earlier where he had bitten off the end of a plastic spoon while eating and thought that the onset of symptoms had a temporal relationship to the incident.

Diagnostic possibilities including malignancy were discussed with his family and careful consideration was given to subsequent investigations. A CT scan of his chest, abdomen and pelvis under general anaesthesia was performed, and given the potential for foreign body aspiration, a bronchoscopy was undertaken immediately prior while under anaesthetic.

Bronchoscopy revealed a narrowed trachea with slit-like lumen, suggesting extrinsic compression, but no additional endobronchial abnormality. The CT scan demonstrated a radiopaque foreign body measuring approximately four centimetres in length within the upper oesophagus (Figure 1) with resultant mediastinal reaction accounting for the changes evident on the initial chest radiograph.

Figure 1 Sagittal view of CT thorax demonstrated a radiopaque foreign body measuring approximately four centimetres in maximum diameter within the upper oesophagus; compression of the trachea and resultant mediastinal reaction (accounting for the abnormal chest radiograph appearance) were also visible.



The patient underwent flexible upper gastrointestinal (GI) endoscopy in theatre under general anaesthetic and a foreign body (FB) was noted in the upper oesophagus (Figure 2A).

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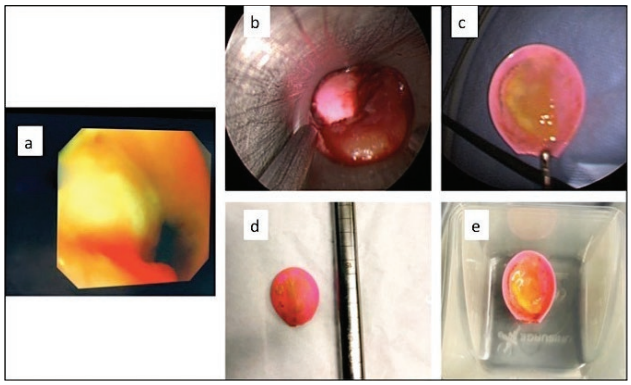
Figure 2 At flexible upper gastrointestinal endoscopy, a FB was suspected (a) which was confirmed on rigid upper GI endoscopy (b) impacted at approximately 20cm from the patient's incisors. The spoon retrieved in one piece smeared with infected debris (c-e).



A rigid oesophagoscope confirmed an impacted FB (Figure 2B) which was pulled out using a heavy grasping forceps (Figure 2C). The FB removed in one piece was indeed the bowl of the spoon (Figure 2 D & E). Following the procedure, the patient's cough began to abate, and a repeat chest radiograph six weeks later showed complete resolution of the mediastinal widening.

While physicians commonly consider FB aspiration as a potential cause for chronic cough, extraneous material in the oesophagus provides a plausible alternative explanation. Here we describe an unexpected cause for a persistent cough and widened mediastinum on chest radiograph in a patient with a rare genetic condition. The importance of obtaining a detailed a collateral account from the caregivers of individuals with neurodevelopmental disorders is highlighted. In this clinical scenario, coordinating appropriate investigations proved logistically challenging; effective communication with the family and a collaborative team approach involving several specialties were fundamental in ensuring a successful outcome for the patient.

References

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