

Management of oesophageal coins in children

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ABSTRACT

Objective Is a watch and wait approach safe in asymptomatic patients presenting to the emergency department with a confirmed oesophageal coin on x-ray?

Methods A retrospective case note review for children <16 years attending with a confirmed oesophageal coin on x-ray over a 7-year period (1 January 2004 to 31 December 2010).

Results 89% (33/37) of coins in asymptomatic patients, who were conservatively managed, had passed spontaneously on repeat chest x-ray up to 18 h later. No patient who was discharged with a middle or lower oesophageal coin required a GA and no child who was treated conservatively developed any complications.

Conclusion In the UK asymptomatic children, with no history of tracheal or oesophageal disease and a confirmed oesophageal coin on x-ray should undergo a period of observation up to 18 h. This can be safely undertaken at home, followed by a repeat x-ray in the emergency department.

INTRODUCTION

The ingestion of coins is a common problem in the paediatric population.¹ Coins retained in the oesophagus have the potential to develop local complications including oesophageal perforation,^{2 3} oesophageal stricture formation⁴ and tracheo-oesophageal fistula.⁵ Patients presenting with symptoms should have the coin extracted immediately.⁶ Management of the asymptomatic patient, however, is less clear as the oesophageal coin can pass spontaneously into the stomach.^{7 8} Two studies have recommended that asymptomatic children presenting with an ingested oesophageal coin can be managed conservatively with observation up to 16 or 24 h.^{7 8}

The aim of our study was to determine whether a watch and wait approach could be safely applied to asymptomatic patients who present to the emergency department.

DESIGN/METHODS

A retrospective analysis was conducted for all children presenting with an ingested oesophageal coin to the Paediatric Emergency Department Leicester Royal Infirmary over a 7-year period from 1 January 2004 to 31 December 2010. Patients were identified by searching for 'foreign body in alimentary canal', 'ingestion of foreign body' and 'oesophageal obstruction' on the Emergency Department Information System. Patients <16 years with a confirmed oesophageal coin foreign body on the IMPAX radiology system were included. Any child with a history of tracheal or oesophageal surgery or ingestion of the coin >24 h earlier were excluded. The position of the oesophageal coin was then identified as being either upper (at the thoracic inlet or at the level of the cricopharyngeus muscle), middle (in the

region of the aortic arch or tracheal bifurcation) or lower oesophageal (below the tracheal bifurcation and the gastro-oesophageal junction). The case notes of all patients were reviewed for demographics, type of coin ingested, whether the patient was symptomatic (coughing, drooling, vomiting, stridor, respiratory distress or dysphagia) or asymptomatic and strategy for treatment (watch and wait versus early surgical removal).

RESULTS

Two thousand fifty-eight cases were identified from the Emergency Department Information System using the search strategy, 484 of these were for the presence of coins and following review on the IMPAX system 63 cases were confirmed to be in the oesophagus. 42 were asymptomatic and 21 symptomatic. None of these had previous tracheal or oesophageal surgery or had ingested the coin >24 h earlier. Of the 63 patients, 26 were girls, 37 were boys with a median age of 4 years old (range 8 months to 13 years). A one pence coin was the most common in the oesophagus (19%). Figure 1 shows a detailed cohort diagram of the results. Five admitted asymptomatic patients had received general anaesthesia without a repeat x-ray. There was no obvious reason for this variation in practice.

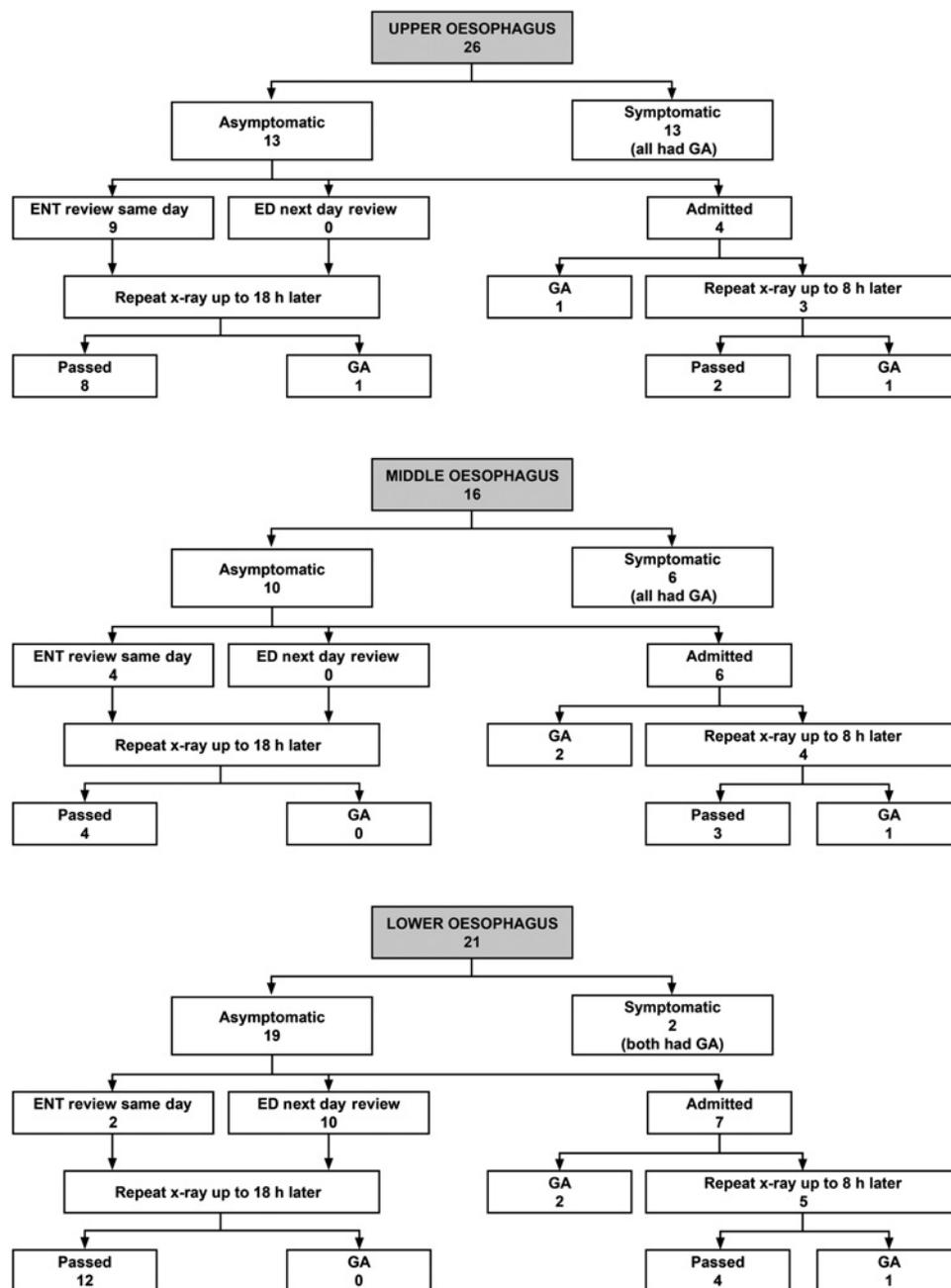
No patient who was discharged with a middle or lower oesophageal coin required general anaesthesia and no child who was treated conservatively developed any complications.

DISCUSSION

We believe this is the first Paediatric Emergency Department study in the UK regarding the management of oesophageal coins in children. We found that 89% (33/37) of coins in asymptomatic patients, who were conservatively managed, had passed spontaneously on repeat chest x-ray up to 18 h later. Other studies have reported considerably lower rates of spontaneous passage of only up to 30%.^{7 8} Connors *et al* reported that no child with a coin in the proximal or middle third of the oesophagus experienced spontaneous passage, compared with 60% in the distal oesophagus that did.⁹ They recommended prompt removal of these coins as these were less likely to pass. One explanation of the higher rates of spontaneous passage is that the coins ingested in our study are UK pence; previous studies have looked at US cents which have a different size and weight.

Two studies have recommended that asymptomatic children presenting with an ingested oesophageal coin can be managed conservatively with observation up to 16 or 24 h.^{7 8} From our results we suggest a period of observation of 18 h post-attendance from the emergency department. Although overall numbers in our unit are low, cost savings associated with a watch and wait approach could be substantial on a national basis.

Figure 1 Cohort diagram of patients included in the study. ED, emergency department; ENT, ear, nose and throat; GA, general anaesthesia.



This study is retrospective, with all the associated limitations. A larger prospective randomised control trial may be undertaken in the UK to validate these findings, including the clinical outcome of ingesting coins of different size and weight.

CONCLUSION

We recommend in the UK that asymptomatic children, with no history of tracheal or oesophageal disease, with a confirmed oesophageal coin on x-ray should undergo a period of observation up to 18 h. This can be safely undertaken at home, followed by a repeat x-ray in the emergency department. If the coin is still present on repeat x-ray, then the local policy should be followed.

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Competing interests None.

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