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Need for endoscopic removal of oesophageal coins in children was similar for strategies of immediate removal and watchful waiting

Waltzman ML, Baskin M, Wypij D, *et al*. A randomized clinical trial of the management of esophageal coins in children. *Pediatrics* 2005;116:614–9.

Q In children presenting to the emergency department with a coin lodged in the oesophagus, what are the effects of relatively immediate endoscopic removal of the coin and watchful waiting?

METHODS



Design: randomised controlled trial.



Allocation: {concealed}.*



Blinding: blinded {data analysts}.*



Follow up period: duration of hospital stay.



Setting: an emergency department in Boston, Massachusetts, USA.



Patients: 60 children ≤ 21 years of age (mean age 51 mo, 52% boys) who had ingested coins that were lodged in the oesophagus. Exclusion criteria were previous tracheal or oesophageal surgery, more than minimal symptoms (respiratory distress, drooling, or choking), or ingestion >24 hours earlier or inability to determine time since ingestion.



Intervention: relatively immediate removal of coin under general anaesthesia by a surgeon using rigid endoscopy as soon as an operating room was available ($n=30$) or watchful waiting, in which the child was admitted to hospital, had continuous cardiac monitoring with pulse oximetry, received intravenous fluids and “nothing by mouth,” and had repeat radiographic evaluation approximately 16 hours after ingestion, with endoscopic removal of any coins that failed to pass spontaneously into the stomach ($n=30$).



Outcomes: proportion of patients requiring endoscopy, length of hospital stay, and complications.



Patient follow up: 100% (intention to treat analysis).

*Information provided by author.

MAIN RESULTS

27% of patients passed coins spontaneously, with similar frequencies of spontaneous passage in the immediate removal and watchful waiting groups (30% *v* 23%, $p=0.77$). The groups did not differ for proportion of patients requiring endoscopy (table). The immediate removal group had a shorter length of stay (10.7 *v* 19.4 h, $p<0.001$). No complications occurred in either group.

CONCLUSIONS

In children presenting to the emergency department with a coin lodged in the oesophagus, relatively immediate removal and watchful waiting for approximately 16 hours had similar proportions of children requiring endoscopic removal of coins. Neither group had any complications.

Commentary

The ingestion of foreign bodies by children is a common problem: approximately 100 000 cases occur each year in the US, and coins are the most common foreign bodies to be swallowed.¹ About 25% of coins will pass spontaneously within 18 hours. However, serious complications, including perforation, fistula, stricture, and respiratory distress, may result from prolonged lodgement of a coin in the oesophagus; thus it is important to identify the most effective treatment. Risks are also associated with endoscopic coin removal, and so this treatment should be used only when indicated.

The randomised controlled trial by Waltzman *et al* compared the effectiveness of watchful waiting with immediate removal of lodged coins. During the study period, 168 children presented with a coin lodged in the oesophagus; of these, 81 were eligible, and 60 were actually enrolled. The authors acknowledge that the sample size was inadequate to assess complication rates, and thus, the relative safety of watchful waiting and immediate removal. Nevertheless, the study showed that watchful waiting for 8–16 hours after ingestion was warranted. Similar proportions of children in the immediate removal and watchful waiting groups required endoscopic removal of coins; the only difference between groups was the shorter length of hospital stay in the immediate removal group. Further study of larger samples incorporating a wider range of clinical presentations is required to determine the risk of complications.

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Relatively immediate removal of oesophageal coins *v* watchful waiting in children*

Outcome	Immediate removal	Watchful waiting	RRR (95% CI)	NNT
Required endoscopy	70%	77%	8.7% (–26 to 35)	Not significant

*Abbreviations defined in glossary; RRR, NNT, and CI calculated from data in article.