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Case report

A novel manoeuvre in a case of foreign body esophagus: An unusual management of a usual presentation

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KEYWORDS

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Abstract *Introduction:* Although considered to be a safe and uneventful procedure, retrieval of a foreign body from the esophagus can occasionally lead to complications such as perforation, fistula, and mediastinitis, especially with sharp objects such as pins or bones. Milder objects such as coins and marbles are usually managed conservatively but sometimes may require general anaesthesia for retrieval. Although less traumatic to the mucosa, a smooth round foreign body such as a marble is difficult to extract with routine grasping instruments like a Magill forceps.
Case: We describe a case of an eight year old male child, who presented to the emergency department with history of ingesting a marble, and a novel yet simple manoeuvre, to minimise chances of downward displacement and maximise chances of successful and atraumatic extraction with minimal manipulation of trachea and esophagus.

1. Introduction

A foreign body lodged into the esophagus is one of the few common clinical scenarios an anaesthesiologist encounters in the paediatric age group. Although considered to be a safe and uneventful procedure, it can occasionally lead to complications ranging from perforation, fistula, mediastinitis [1] to failure of procedure in the form of dislodgement further down into the esophagus. We describe a similar case in an eight year old boy, which was managed in a way so as to ensure successful recovery of the foreign object, with minimal manipulation of trachea and esophagus.

2. Case report

An Eight year old male child presented to the emergency department with history of ingesting a marble. The boy described the object as being stuck in the throat and initial attempts at removal by family members were unsuccessful.

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There appeared to be no history suggestive of any respiratory distress or cyanosis, which was corroborated with examination findings. Although the child was a bit anxious and was grasping his throat which was a bit alarming at first, but after calming him and examining him, there was no stridor or any finding suggestive of an obstructed airway. Chest radiography, antero-posterior and lateral films confirmed the position of the marble at the crico-pharyngeal sphincter.

The child was kept in the pre operative room for observation and was listed for emergency removal of foreign body in the operation theatre (OT). He allowed a peripheral venous cannula to be inserted after preparing the area with an EMLA patch. Aspiration prophylaxis was given in the form of Inj Metoclopramide 5 mg and Inj Ranitidine 25 mg Intra-venous (IV).

The plan of ventilation was formulated as apnoea ventilation using bag and mask ventilation so as to avoid Endo tracheal (ET) intubation and undue prolongation of procedure. After three minutes of pre-oxygenation the patient was induced with propofol 70 mg IV and fentanyl 50 mcg, followed by succinyl choline (Sch) 50 mg. Just before administering Sch the OT table was put in a steep trendelenburg position to avoid downward migration of marble with muscle relaxation, along with gentle physiotherapy of the chest to further ensure that it stayed near the crico-pharyngeal sphincter. A quick laryngo-esophagoscopy using size 2 Miller blade was done to view the oesophageal opening. As soon as the marble was in view an assistant was asked to give gentle pressure on the trachea just above the sternal notch, similar to how cricoid pressure is given in rapid sequence intubation (Fig. 1). This was done in an effort to avoid downward displacement during manipulation of the marble as its round structure made grasping with a Magill forceps difficult compared to other common foreign bodies like a coin. The marble was removed successfully. Table position was returned to a slight head up and child was woken up uneventfully.

3. Discussion

Most common objects encountered in the paediatric age group are toys including marbles, coins, sharp objects such as pins, batteries and food items such as bones [1]. But the usual complication rate of less than 1% increases to almost 15–35% in case of sharp foreign objects [1]. A rounded object like a marble, although less traumatic to the mucosa is difficult to extract with routine grasping instruments like a Magill forceps [2] or a Rigid Esophagoscopy (RE) grasping forceps.

It is also believed and observed that once the object passes into the stomach crossing the usual constrictions of the esophagus leading to it, it will most likely pass through the intestine and out with stool. But both parents and doctors alike would preferably like to have the object in hand at the end of the procedure to rid the mind of the uncertainty. Symptomatic cases should no doubt be operated upon urgently, but asymptomatic cases cause some differential views in terms of decision to undergo OT retrieval or not. Recent data advocates expectant management for a period of 12–24 h [3].

In a scenario where initial attempts at laryngoscopy and extraction lead to downward displacement of the foreign object, ET intubation followed by RE and extraction is generally a rescue option. But this leads to undue manipulation of the trachea as well as the esophagus.

Sellick's manoeuvre is generally applied during rapid sequence induction to avoid aspiration of gastric contents in full stomach and susceptible patients [4–6]. The completely circular and rigid cricoid cartilage is believed to cause enough compression of the esophagus so as to prevent upwards regurgitation, although this has been a matter of controversy lately [4–7]. In this case, the described pressure on the trachea just above of the sternal notch would theoretically not provide a compression quality like that of the cricoid but enough generalised pressure to avoid downward migration of the foreign body, thus serving a purpose opposite to that of a Sellick's manoeuvre.

In the described case we were slightly more aggressive in preventing downward migration of the object because of its smooth circular surface which had more chances of slipping down compared to other common objects such as coins, metallic irregular objects or even organic material. In such cases of irregular foreign bodies, removal through a rigid esophagoscope would probably be a wiser choice owing to their tendency to cause trauma while extraction [1]. But the general measures described

Figure 1 Head down tilt and supra-sternal pressure.

can be used universally, irrespective of type of foreign body after taking appropriate anti aspiration measures.

4. Conclusion

The approach to retrieval of a foreign body in the esophagus depends on initial severity of symptoms and also the site of lodgement. Sharp objects and other harmful materials such as batteries should be removed via esophagoscopy, on urgent bases even if asymptomatic, whereas milder, less traumatic objects such as marbles can be retrieved with minimal manipulation of both trachea and esophagus with the technique described above, if expectant or conservative management is not feasible. One should also withhold the urge to remove the foreign body as soon as it is seen and make sure that it does not migrate down.

Contribution details

	Mridul Dhar	Ram Badan Singh	Pushkar Ranjan	Shiv Prasad Sharma	Vishal Krishna Pai
Concepts	Yes	Yes	Yes		
Design	Yes	Yes			Yes
Definition of intellectual content	Yes	Yes	Yes	Yes	Yes
Literature search	Yes	Yes	Yes	Yes	Yes
Manuscript preparation	Yes	Yes			
Manuscript editing	Yes	Yes	Yes		Yes
Manuscript review	Yes	Yes	Yes	Yes	Yes
Guarantor	Yes	Yes	Yes	Yes	Yes

Conflict of interest

The authors declare that there are no conflict of interests.

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