

Can a Foreign Body Move Up the Oesophagus?

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Abstract

Introduction: Foreign Body ingestion and its subsequent impaction in oesophagus of children is very common. There is a recent increase in the number of cases reporting with button battery ingestion due to widespread use and easy availability. This is an emergency and needs urgent surgical intervention, because the chances of the button battery to safely pass through the alimentary canal are low due to the high possibility of the button battery to damage the oesophageal mucosa and perforate it.

Case Report: We present a rare case of 3 year old female child who presented to us with a history of foreign body ingestion, presumably a button battery. The battery was removed successfully by rigid hypopharyngoscopy with oesophagoscopy under general anaesthesia.

Conclusion: Although most foreign bodies pass through spontaneously, their retrograde movement is rare, especially in cases of button battery ingestion. The retrograde movement of ingested foreign body in our case can be possibly explained by increased intra-oesophageal pressure and lubricating action of honey.

Keywords: Oesophagus; Foreign Body; Anaesthesia

Introduction

Foreign body ingestion is a very common occurrence in the paediatric age group. Most of the ingested foreign bodies would either pass into the oesophagus or into the trachea and if the foreign body is a battery, it would require urgent removal for the fear of injury to the mucosa. Batteries in the oesophagus are to be removed as soon as possible, preferably within 2 hours of ingestion. Other than the time of ingestion, the type of battery, the age of the battery and the location where it is stuck is also important for pre-op planning and prognostication purpose [1]. Here, we present a

case of an ingested foreign body which moved up the oesophagus by the time the patient presented to us.

Case Report

A 3-year-girl presented to us in the emergency of Lady Hardinge Medical College which is attached to a dedicated paediatric hospital. The patient was referred to us from another tertiary care institute for removal of an ingested foreign body. The patient had ingested the battery at around 2 pm on the day of the presentation and was taken to the hospital by the parents. After getting a Chest

X-Ray (PA view) done, which showed a round radio-opaque foreign body at the level of mid-oesophagus; the patient was referred to our centre for further management (Figure 1). On taking a detailed history, it was revealed that before reaching the hospital, the parents had fed the patient some honey on the advice of relatives. The parents also gave a history of a single episode of vomiting post-ingestion of the foreign body. General examination of the child showed no abnormality and the vitals were stable. A fresh Chest X-Ray was ordered to confirm the level of foreign body in the oesophagus. To our surprise, the foreign body had moved up and was now stuck in the upper oesophagus (Figure 1). Though the management plan still remained the same, it came as a surprise to us as we had not observed a case of an ingested metallic foreign body like a battery moving in a retrograde direction without any surgical intervention. The patient was taken up in the emergency operation theatre and a rigid hypopharyngoscopy with oesophagoscopy under general anaesthesia was done to retrieve the foreign body (a button battery). The battery was visualized at 10 cm from the upper incisors and was removed without any complications (Figure 2). Check oesophagoscopy showed patches of charring at the both the sites where the battery was lodged. A nasogastric tube was inserted intra-operatively.

Figure 1: Chest X-Ray (PA view) demonstrates a double ringed, circular, radio-opaque foreign body at the level of mid oesophagus in an X-Ray obtained at the first hospital which moved to the upper oesophagus by the time a repeat chest X-Ray was done.

Figure 2: Battery after removal, shows signs of corrosion with a coating of viscus substance possibly honey.

Patient withstood the procedure well and was kept under observation in the ENT ward for 48 hours. The patient was discharged after a post-op chest x-ray revealed no foreign body or post-op complications. The child was allowed orally after nasogastric tube removal on a follow-up visit on the fifth day.

Discussion and Conclusion

Eighty to 90% of the ingested foreign bodies pass spontaneously within 3 to 7 days [2]. The normal oesophagus has 3 primary areas of physiologic narrowing: the upper oesophageal sphincter (UES) that includes the cricopharyngeus muscle, the middle oesophagus where it crosses over the aortic arch, and the lower esophageal sphincter (LES). In children, approximately 74% of foreign bodies are entrapped at the UES level. In adults, approximately 68% of obstructions occur at the distal oesophagus associated with pathologic abnormalities [3]. Children with a history suggestive of disc battery in the oesophagus need emergency management for the fear of complications related to erosion, perforation or oesophageal stricture [4]. It is recommended that the batteries in oesophagus must be removed within 2 hours of ingestion [1].

Retrograde movement of ingested foreign bodies up the gastrointestinal tract is rare and we believe that in our case, it was due to the increased pressure in the lower oesophagus during the episode of vomiting coupled with the lubrication provided by the coating of

honey around the battery that was given to the child. Administering honey is beneficial in a suspected case of battery ingestion if the time of ingestion is less than 12 hours [1]. Honey is given to coat the battery and prevent local generation of hydroxide ions, thus delaying the alkaline burns to the adjacent tissues [5]. A retrograde movement of a battery in the gastrointestinal system has been described before in the medical literature, when a battery moved from the stomach to the oesophagus after administration of ipecac and another time when a cylindrical battery moved retrograde through the ileocecal valve during colonoscopy [6,7]. The oesophagus does allow for retrograde movement only under specific circumstances. This occurs normally for air swallowed with the meal, in the process of belching, or abnormally during vomiting. During the retrograde movement in humans and most mammals, the oesophagus itself is a passive conduit; that is, there are no specific motility functions that propel vomitus or air along the length of the tube. Our case can be explained on a similar basis where the foreign body was propelled upwards just like the vomitus and it being lubricated by honey might have made the movement possible.

It should be pertinent to note that though the position of the ingested battery changed during the course of planning of treatment, the intervention itself still remained the same, that is, rigid oesophagoscopy and removal of the foreign body under general anaesthesia on an emergency basis without any delay.

Conflict of Interest

None.

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