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Alleged Nail Ingestion: How and When to Intervene

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Abstract: Foreign body (FB) ingestion is a common situation which we are dealing nowdays. We presented as case of nail ingestion by a 19 year-old young gentleman. Urgent endoscopy procedure shows high successful rate in retrieving the FBs, but surgical approach is justified in case of failed endoscopic removal of sharp FBs like nails to prevent intestinal perforation and other complications due to unpredictable migration of FBs.
Keywords: Foreign body (FB), ingestion, nail ingestion, endoscopic removal, surgical removal

INTRODUCTION

Foreign body (FB) ingestion are common in all ages either male or female, which usually happen incidentally. It is common problem necessitating immediate intervention to avoid unwanted complications.

Fortunately , majorities of the ingested FBs passed out spontaneously without complications. FBs which are too large to cross the pylorus of the stomach and duodenum need removal and majority of the cases can be retrieved by flexible oesophagogastroduodenoscopy (OGDS). Pointed and sharp FBs can cause constant hazard to the patient.

CASE REPORT

A 19 year-old young gentleman, presented to Emergency department for accidental nail ingestion during working. He complaint of epigastric pain after the ingestion, associated with vomiting, which contained food particles and minimal fresh blood.

On general examination, his vital signs were within normal range. Abdominal examination was unremarkable; soft and no peritonism.

Serial plain abdominal X-ray done showed the nail was within the stomach (Fig 1,2). His hematological investigation and renal profile within normal limits.

Fig 1: on admission, nail in the stomach in vertical position

Fig 2: after 16 hours since admission, nail still in the stomach

Urgent flexible Oesophago - gastroduodenoscopy (OGDS) done on the same day, but unable to find and locate the nail due to clumps of undigested food particles. Then he underwent 2nd OGDS under general anesthesia by the senior consultant surgeon , with the help of X-ray image intensifier (Fig 3), but still unable to locate the nail.

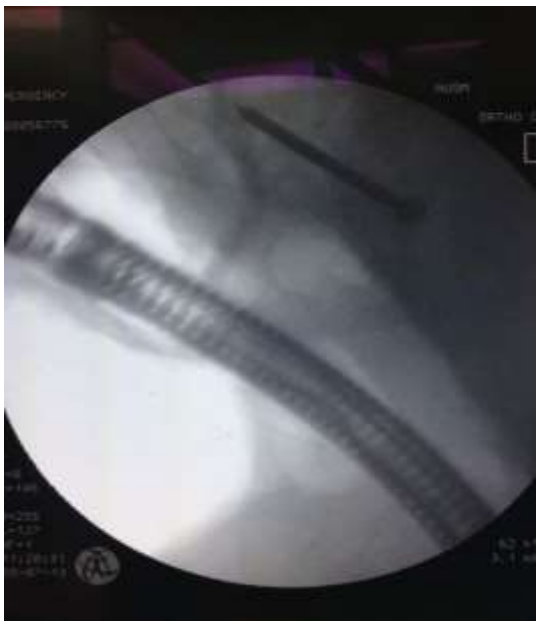

Fig 3: OGDS done, but unable to visualized the nail, but with the help of image intensifier, nail's image parallel to the OGDS scope, which is located at D4 of duodenum, before converted to laparotomy

Exploratory laparotomy was performed and 5cm nail was found located in the D4 (duodenum), and the nail removed through the small opening on the stomach body (Fig 4,5).Postoperatively, patient recovered well and discharged well home after day 7 of operation .

Fig 4: nail removed through gastrotomy site

Fig 5: 5cm nail removed

DISCUSSION

Incidental ingestion of FBs is not a rare problems in Malaysian community. Among the various specialties who care this condition, the management is not standardized either in adult, children or even infants [1]. Common FBs ingested are coins, nails, magnets, pins, keys, small toys, button batteries, stones, rings and nails.

Common cause usually accidental, but mental disorders, bulimia, drug abuse and alcohol consumption are other contributing factors, especially in adult [2].

Vast numbers of ingested FBs that reach the stomach pass uneventfully through the gastrointestinal tract and the overall risk of perforation is 1 % [3].

Endoscopic removal is needed in up to 20% of the cases and in about 1% of the cases, surgical intervention is required, depending on shape, size, number, nature and location of the FBs[2,3]. In general indication for FBs removal include all oesopahgeal FBs, FBs in stomach that is sharp, pointed end or toxic, blunt FBs more than 4 cm in length and 2cm in diameter and presence of non-toxic blunt FBs for 2 weeks in the stomach or 1 week in the duodenum [4].

Blunt FBs which are non-toxic types , smaller than 4 cm x 2 cm can be safely observed for spontaneous passage except with ingestion of multiple magnets , where it risks intestinal perforation and fistula formation due to attraction to one another between the magnets, and hence necessitates removal before they pass beyond the reach of endoscope [2].

Sharp or pointed FBs necessitate urgent removal as they lead to hazardous complications associated with unpredictable migration. They should be removed before they cross the stomach as 15% to 35% of them can cause intestinal perforation [4]. Perforations usually occurred at the oesophagus, but other sites such as pylorus, duodenum, duodenojejunal

flexure, ileoceacal junction, Meckel's diverticulum or previous surgical site are also prone to perforate due to FB impaction [5].

Endoscopy under general anesthesia is safe and effective in removing FBs but demands innovation, accessory instrumentation and skillful application of endoscopic techniques.

Even though this patient underwent emergency OGDS following the admission to our hospital, we could not retrieve the nail endoscopically as it had migrated to D4 of duodenum less than 12 hours of the admission. As a result this patient end up with laparotomy and the nail was found lodged at the D4 of duodenum and was retrieved through gastrostomy. This case demonstrate the potential complications of nail migration and subsequence complications and need for emergency intervention.

CONCLUSION

FBs ingestion is a common situation which we are dealing nowdays, urgent endoscopy procedure shows successful in retrieve the FBs, but a surgical approach is justified in case of failed endoscopic removal of sharp FBs to prevent intestinal perforation and other complications due to unpredictable migration of FBs. However, even though endoscopic removal of FBs is safe with up-to-date innovative technique and accessories, the most effective management of FBs accidents is still prevention.

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