

Case Report of Nail Ingestion in a Child: Any Need for Operation?

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ABSTRACT

Foreign body ingestion in children remains a common paediatric surgical problem particularly when the object ingested is sharp. Sharp objects ingestion is associated higher risk of complication such as perforation of viscus and therefore, increases the need for surgical intervention. The article is a clinical report on ingestion of a nail, with rare size and unique shape by a 6-year-old unsupervised child that was managed non-operatively. Clinical monitoring and an X-ray film are the first options that should be considered in foreign body ingestion. Non-operative care may suffice especially when there is a significant onward movement of the ingested foreign body leading to safe expulsion as long as there is no symptom indicative of any complication. Ingestion of foreign bodies is a common surgical emergency in children requiring close monitoring with or without surgical intervention.

Keyword: Foreign body ingestion, Nail, children

INTRODUCTION

Foreign body ingestion in children continues to be a challenge despite public education and associated potential complication^[1]. The exposure of children to unsafe and poorly supervised environment is contributory in most cases, as is the keen exploratory nature of children. Coins remain the most common foreign body ingested in children since the introduction of coins as a means of commercial exchange^[1,2,3]. This is more so in regions where coins are readily available to children. In areas where children are exposed to other forms of foreign bodies, the object ingested may vary.

When the ingested object is a nail or any other sharp object, it is more likely to present with associated complications^[2,3]. Varying findings were observed when gender predilection was reviewed, while some studies showed higher incidence in boys^[3], a review study showed no gender differences^[2]. The majority of the ingested foreign body is passed out spontaneously, with a greater proportion of the remaining requiring endoscopic retrieval, only very few require surgical intervention, particularly those with long length (>5cms), wide diameter(>2cms) or several objects with magnetic properties^[2]. This is the

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report of a girl that was managed non-operatively for an ingested nail, unique in dimension, shape and size of the object.

CASE REPORT

A 6-year-old girl was brought by her parents 4 hours after ingestion of a nail. The child while playing at a carpenter's shop close to her mother's shop without supervision mistakenly ingested a nail. The child informed the mother about the ingestion of the nail. There was no dysphagia, odynophagia, neck pain, chest pain, dyspnoea, haemoptysis, or abdominal pain. Her last meal was about 10 minutes before the event. It was difficult to ascertain the size of the ingested nail from the patient or parents. She was a nursery 3 pupil, the last of 4 children in a monogamous family setting. Her mother is a seamstress and her father is a subsistent farmer. She was calm, not in any painful distress but apprehensive, pink, well-hydrated, and afebrile (36.8°C). Abdominal examination was normal and examination of other systems gave normal findings. Clinical suspicion of asymptomatic accidental foreign body ingestion was made.

Urgent chest and abdominal x-ray done showed a well outlined homogenous radiopaque shadow in the region of the stomach, confirming the foreign body ingestion. Haematological investigations and serum electrolytes were within normal limits. A lateral abdominal x-ray (Figure II, Figure III) after the incident also showed the outline of the nail at the level of L3/L4 to the right of the midline probably in the ileum. She was admitted at request of the parent. She was managed non-operatively by close monitoring for features of bowel perforation. She had nil per oral, intravenous paediatric dextrose saline, antibiotics (Amoxicillin, Metronidazole, and Gentamicin) and accelerated immunization for tetanus.

After 12 hours on admission with no features of bowel perforation, she was allowed to take an enteral high fibre diet and she passed the nail (Figure I) in her stool 33 hours after it was ingested. The size of the nail ingested was 35mm long and 3mm wide. She was observed for another 6 hours and then discharged when she remained well without problems. At follow up in the paediatric outpatient clinic, she remained healthy.

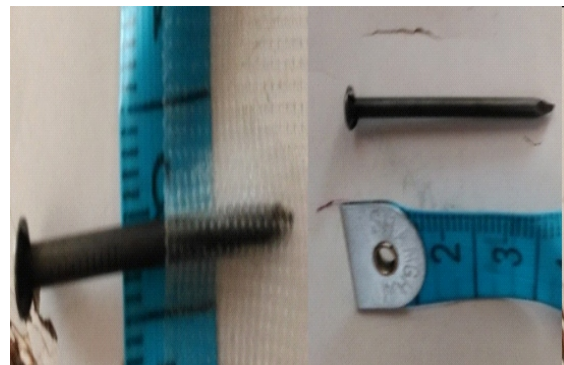


Figure I: Length and width of ingested nail



Figure II: Posterior view of the thoraco-abdominal region with nail seen



Figure III: Lateral view of the thoraco-abdominal region; Shows Progressive movement of the nail after 12 hours following ingestion

DISCUSSION

The girl in this report while playing with a nail incidentally ingested it. This is not unusual because, in most cases of foreign body events with children, the object is ingested into the gastrointestinal tract, not the airway^[5]. Although several studies reported ingestion of foreign body to be more common in children aged under 5 years and boys^[3,6], in this report, however, an older child and a female was the case. This is similar to the report by *Naumeri et al*^[7], where the age of ingestion was 10 years. It appears when ingestion of foreign body involves girls, they are older. Ingestions of coins remain the most common foreign body^[6], it appears that the incidence of nail ingestions is on the rise^[3,7].

The presenting symptoms for foreign body ingestion

range from asymptomatic to dysphagia, pains in the neck, throat or abdominal pain, choking, cough, or dyspnoea^[4]. Foreign body ingestions most commonly present with dysphagia and more than two-thirds of the patients report for emergency care within 24-hours^[6]. Ingestion of nails could be asymptomatic as reported in this case and other studies^[3,7].

Ingestion of nails may present late with complications as seen in a recent study where the child was presenting after 20 days of ingesting a foreign body with symptoms of duodenal perforation^[7].

Most radiopaque objects will be visible on plain x-ray, therefore a computerized tomographic scan is not necessary^[2]. In cases of ingestion of translucent objects, contrast studies are required to visualize the location of the object in the gastrointestinal tract. In this report, two plain x-ray films were obtained 8 hours apart to follow the progress of the ingested nail within the gastrointestinal tract as well as clinically monitor the child for any untoward events. Serial X-ray films taken showed progression of the foreign body in the child's gastrointestinal tract; therefore, non-operative treatment may suffice^[6] particularly if there is no symptom/Signs of complications noticed, this was the case in this report. Fixation of the foreign body at the same location on serial of x-ray films^[7], signifies no progression of the object and would be associated with higher chances of complications.

Nonoperative management with active surveillance was effective in our patient. Non-operative management with active surveillance may be adequate in most cases of foreign body ingestion. Endoscopy may be particularly helpful when foreign bodies are arrested within the oesophagus^[6]. Expulsion of the nail happened within 48 hours of ingestion in the index case. Another study had reported expulsion of the ingested nail after non-operative active surveillance by the 4th and 6th day after ingestion in the two patients^[3]. Earlier expulsion of

the foreign body may be aided by the intake of a high fiber diet, thereby shortening gastrointestinal transits time.

A case study reported ingestion of a nail with no progression on series of x-ray films eventually led to laparotomy with intra-operative findings of an embedment of the head of the nail in the perforated second part of the duodenum covered by omentum^[7]. The child in this report did well on non-operative management with active surveillance and still maintained good health at follow-up. Non-operative treatment with active surveillance may therefore be considered safe and effective only when there is no complication and serial x-ray film reveals the progression of the foreign body^[8].

CONCLUSION

Non-operative care with active surveillance remains a viable option for management of ingested nails especially when there is onwards progression on serial x-ray films and without symptoms suggestive of complications. It may be helpful to allow the intake of a high fiber diet to facilitate the expulsion of the ingested foreign body while actively monitoring the patient.

Conflict of Interest Statement

The authors have declared no competing interests.

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