

Chocolate Stick Causing Concealed Intestinal Perforation with no Signs of Peritonitis in a Child: A Case Report

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ABSTRACT

To highlight a very uncommon presentation of intestinal perforation in a child caused due to foreign body. 10-year-old kid presented to the emergency with chief complains of pain abdomen for 2 days. There was no evidence of any peritonitis. X-ray and Contrast enhanced computed tomography scan revealed no pathology other than gas under diaphragm. On exploration there was a concealed perforation caused due to chocolate stick ingested by the kid. There was no free fluid or contamination found in the peritoneal cavity. Foreign body ingestion by kids is very common. 80-90 % these objects pass with stool not causing any injury to the viscera. In 10 to 20 % cases they require endoscopic removal. 1 % of these cases can cause perforation and have to be removed surgically. Majority of the times these foreign bodies are not seen on X-rays or CT scans. There may be cases in which patients may not present with features of perforation peritonitis but still patients must be assessed properly to undertake intervention at appropriate time to reduce complication. In such children presenting to emergency with acute pain abdomen, a high degree of suspicion for foreign body ingestion should be kept in mind and evaluated accordingly.

KEY WORDS: Concealed perforation, Pediatric age group, No signs of peritonitis, X-ray, CECT Whole abdomen.

Introduction

Children very frequently ingest foreign body because of ignorance^[1]. These foreign bodies may be blunt or have sharp/ pointed edges. The second category of foreign bodies are more harmful because of their tendency to injure hollow viscera. Majority of the times ingested foreign bodies are radiolucent and are very hard to trace on imaging. These foreign bodies can either perforate through hollow viscera, can cause intestinal obstruction or can pass out with stool.

Case

10-year-old kid presented to the emergency with chief complains of pain abdomen for 2 days. There was no history of any foreign body intake by the patient. On X-ray abdomen there was a radio-opacity of tip of ryles tube seen in right hypochondrium along with gas under right dome of diaphragm Figure 1.



Figure 1: Plain radiograph abdomen erect showing gas under right dome of diaphragm and radiopaque tip of ryles tube

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To investigate further contrast enhanced computed tomographic scan of whole abdomen was done which also did not reveal any other pathology except pneumoperitoneum Figure 2.

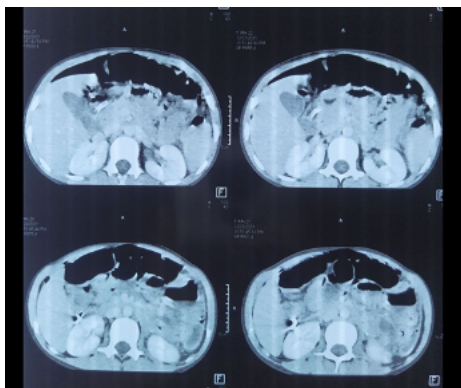


Figure 2: Axial sections of CT abdomen showing no evidence of any foreign body

The patient was planned for exploratory laparotomy. After all necessary investigations done patients abdomen was explored under general anesthesia. Midline incision was given. On entering the peritoneum, there was gush of air escaping out of the peritoneal cavity but there was no free fluid found and the bowel looked healthy. On further exploration it was found that two bowel loops were adhered to each other very close to the duodenojejunal junction. On gently separating them it was found that there was a plastic stick which perforated the jejunum and was protruding partially into the peritoneal cavity Figure 3.



Figure 3: Plastic chocolate stick perforating the jejunum and partially out in the peritoneal cavity

The tip was round and not so sharp. Along with the stick there was minimal fluid and flakes present in

between the adhered loops Figure 4. The foreign body was removed and the defect was primarily closed using an absorbable suture. A pelvic drain was placed and the abdomen was closed. It was later identified that it was a chocolate stick which the kid had ingested. Patient did well in post-operative period. He was allowed orally on post-operative day-4 and discharged on day 6.



Figure 4: Concealed fluid and flakes in between bowel loops due to perforation

Discussion

Foreign body ingestion by kids is very common^[1]. 80-90 % these objects pass with stool not causing any injury to the viscera. In 10 to 20 % cases they require endoscopic removal if they get stuck. 1 % of these cases can cause perforation and must be removed surgically^[2-4]. Management of these cases depends on the type of material ingested. Some foreign bodies such as magnets, batteries though not sharp but needs immediate intervention for their removal or else can cause severe injury to the bowel^[5]. Other benign noncorrosive foreign bodies inside bowel can be managed conservatively and most of the times they come out with stool. Esophageal injury can cause pneumomediastinum and gut injury below diaphragm can cause pneumoperitoneum. Tang LJ et al. in 2018 in his study concluded that button cell are more likely to cause esophageal perforation and it is the most commonly injured organ^[6]. Early gut injury caused by foreign body is mucosal erosion followed by ulceration and eventually leading to perforation of gut. Along with pneumoperitoneum these injuries also causes peritonitis due to leakage of intestinal contents and this sign can be very easily elicited during clinical examination. Shao F et al. in 2020 in his study observed that out of 35 children who ingested foreign body, 26 of them developed intestinal perforation and 9 of them presented with intestinal obstruction^[7]. They also

concluded that early identification of such cases can help in prevention of developing complication also early surgical intervention and removal of foreign body results in better outcome. But in children it is very difficult to extract history more so if the parents are not around either because they do not remember or due to fear^[8–10]. In such scenario the clinician has to depend more on the clinical signs to come to a diagnosis. In this case there was no sign of any peritonitis. The only complain was pain abdomen. The foreign body in this case was a plastic chocolate stick which the kid ingested. It could not be detected on X-ray but there was free gas seen under right dome of diaphragm. Plain X-rays still play a very crucial role in cases of foreign body ingestion in pediatric age group^[11]. Arana et al. in 2001 in his study found that only 64 % of ingested foreign bodies are radiopaque^[8]. Usually the presence of abdominal gas obscures image of any foreign body in X-ray. Other investigative modalities which can be used are fluoroscopy, barium meal, computed tomography scan (CT scan) etc. Barium studies are contradicted in perforation peritonitis. Radiologist should also keep high level of suspicion during reading these films and must be familiar with the appearances of these foreign bodies on imaging.

Conclusion

Foreign body ingestion in children is a very common occurrence. In some instances proper history from patient or their parents is unavailable. Such cases presenting to emergency with acute pain abdomen, a high degree of suspicion for foreign body ingestion should be kept in mind and evaluated accordingly.

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How to cite this article: Baidya M, Kumar S, Singh AD, Pandey SK, Giri S. Chocolate Stick Causing Concealed Intestinal Perforation with no Signs of Peritonitis in a Child: A Case Report. *J Med Sci Health* 2022; 8(2):182-184

Date of submission: 28.01.2022

Date of review: 15.02.2022

Date of acceptance: 06.07.2022

Date of publication: 07.09.2022