

Gastric Perforation After Incidental Ingestion Of Datun: Report Of An Unusual Case

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ABSTRACT

Gastric perforation is an extremely rare complication of foreign body ingestion, which usually presents with peritonitis. Ingestion of foreign bodies is a fairly common presentation and most of these cases can be managed conservatively. Larger foreign bodies however, can sometimes be difficult to manage. We present a peculiar case of gastric perforation following involuntary ingestion of a large foreign body i.e. Datun (It is a tree twig commonly used for cleaning teeth in rural India).

A 57-year male presented to our accident and emergency department with complaints of pain in upper abdomen following involuntary ingestion of Datun while brushing his teeth 7-8 days back. During this period the patient was passing flatus and stools normally. He also had history of smoking and occasional consumption of alcohol. On examination of the abdomen the patient was found to have tenderness and guarding in upper abdomen. He was investigated further with a provisional diagnosis of perforation peritonitis. Free air under the diaphragm was evident on chest X ray.

Upon exploratory laparotomy the patient was found to have a perforation in the body of the stomach with one half of the Datun protruding out of it. Primary closure of perforation was done after removal of the foreign body. Postoperative period was uneventful and the patient was discharged on the 5th post operative day.

Symptomatic giant ingested FBscan be challenging to manage and may even require urgent surgical intervention if perforation is suspected. Although ingested foreign bodies are rarely symptomatic they should be considered in differential diagnosis of abdominal pain as well as possible cause of acute abdomen.

Key words: Datun, Foreign body, Gastric perforation, Primary closure.

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Conflict of interest: No

Case report is Original: YES

Whether case report publishes any where? NO

INTRODUCTION

Foreign body ingestion is a common occurrence, especially in children, alcoholics, mentally handicapped and edentulous people wearing dentures. However, majority of the individuals pass these objects without any complications [1]. Most foreign bodies pass readily into the stomach and travel the remainder of the gastrointestinal tract without difficulty; nevertheless, the experience is traumatic for the patient, and the physician, who must await the removal or ultimate passage of the foreign body [2]. Any foreign body that remains in the gastrointestinal tract may cause obstruction, perforation or hemorrhage, and fistula formation. Less than one percent of these foreign bodies may result in perforations from the mouth to the anus, most often due to sharp objects [3]. However, foreign objects longer than 6 cm cannot negotiate the physiological narrowing of the pylorus and always remain in the stomach [4]. These objects should be removed as soon as possible to avoid pressure necrosis, gastrointestinal perforation or bleeding [4]. However, in rare cases, large foreign bodies which have been swallowed can also remain in the stomach over a long period of time without any significant symptoms. The first alarming symptom may occur several months after ingestion. In such cases endoscopic extraction is always the first therapeutic option [4]. If endoscopic removal fails or if there is evidence of obstruction or perforation, laparoscopic gastrotomy should be performed. Majority of the foreign bodies of different shapes and sizes are reported to pass spontaneously without much harm to the patients during the period of observation. When foreign bodies do not pass spontaneously endoscopic or surgical removal is necessary. Surgery is indicated in failed endoscopic removal. Conventionally foreign bodies are removed by laparotomy.

CASE REPORT

We are here presenting a case of acute abdomen due to accidental ingestion of a Datun. A 57 year male came to the Accident and Emergency department of Pt. B. D. Sharma PGIMS, Rohtak, Haryana. He had history of upper abdominal pain for one day following accidental ingestion of Datun 7-8 days back. Patient also had the habit of voluntarily inducing vomiting to expel the stomach contents after irritating the pharynx in every morning. Patient also had the history of smoking and occasional consumption of alcohol. Patient was asymptomatic for 1 week after the ingestion of Datun before he developed sudden severe pain in upper abdomen. There was no history of vomiting or non-passage of stool and flatus. On general examination, the patient was found to have tachycardia (110 beats per minute). On thorough abdominal examination the patient had tenderness and guarding in upper abdomen.

Patient was then subjected to further investigations with a provisional diagnosis of perforation peritonitis. On chest X-ray free air under the diaphragm was evident. There was no evidence of free fluid on trans-abdominal ultrasound.

On exploratory laparotomy a perforation was noted in the anterior wall of stomach with one half of the ingested Datun protruding out of it. (Fig 1A, 1B) Primary closure of the perforation was done after removal of the foreign body. (Fig 2) Post operative period was uneventful and the patient was discharged on fifth post operative day.

Fig 1: Original intra-operative image showing datun protruding from the site of perforation.



Fig 2: Original intra-operative image showing perforation in the anterior wall of stomach.



Fig 3: Image of Datun extracted from the stomach during exploratory laparotomy.



DISCUSSION

Patients often present to the emergency with complaints of accidental ingestion foreign body, especially in the pediatric age groups. The majority of objects however, pass through the gastrointestinal system without any sequel. Perforations occur in less than 1% of the cases,

mostly involving the esophagus and ileocecal region [5]. Gastric perforations secondary to foreign body ingestion are very uncommon and patients usually present with features of peritonitis [5]. Once a foreign body reaches the stomach in more than 90% of the cases it will pass out of the gastro-intestinal tract spontaneously. However, objects larger than two centimeters in diameter may lodge at the pylorus; whereas longer objects may become entrapped at the pylorus or at the C-curve of the duodenum between the first, second and third parts of the duodenum and rarely pass beyond that [6]...Complications of FB ingestion range from hemorrhage, bowel obstruction, perforation and erosion into adjacent viscera. Hemorrhage occurs when the FB injures the mucosa or lodges in a region close to visceral artery like in the pylorus eroding into the gastro duodenal artery [7]. It is found that sharp foreign bodies are most difficult to manage; the most common among those are toothpicks, nails, bones, blades, teeth, dental prosthesis, pins, and needles and amongst these the most common to require surgical intervention for extraction are toothpicks and bones [8]. Usually endoscopic removal of these is warranted and successful many a times. Only about 1% perforates the gut, so all sharp and pointed foreign bodies should be removed before they pass the stomach since they are associated with a perforation at the ileocecal region in about 40% of the cases [9]. Patients with foreign body perforations in the stomach, duodenum, and large intestine are significantly more likely to be febrile with chronic symptoms with a normal total white blood cell count compared to those with foreign body perforations in the jejunum and ileum [10]. However, clinical presentation may also include vague symptoms such as fever and abdominal pain, or the symptoms may be extremely subtle over a longer period of time [11].

The signs and symptoms caused by foreign body ingestion also vary according to the interval between ingestion and presentation [11]. Endoscopy is considered the first choice for the management of gastric foreign bodies due to its efficacy, low morbidity and reduced costs compared to surgical treatment [11-14]. The removal of large foreign bodies from the stomach is influenced by the patient's clinical condition as well as the technical abilities of the endoscopist [11-15]. If endoscopic removal fails or if there is evidence of obstruction or perforation, surgical removal should be considered. Treating patients with ingested foreign bodies is common in clinical practice. A distinction is made between accidental ingestion of a foreign body and intentional ingestion with secondary gain [11]. In all suspected cases of foreign body ingestion and perforations, plain radiographs of neck and chest in both anterior posterior and lateral views are required in addition to abdominal films. CT scans are more informative especially if radiographs are inconclusive [17]. Although, in some cases imaging findings can be nonspecific, however, the identification of a foreign body with an associated mass or extra luminal collection of gas in patients with clinical signs of peritonitis, mechanical bowel obstruction, or pneumo-peritoneum strongly suggests the diagnosis [18]. A plain radiograph is effective in localizing most of radio-opaque objects [19]. If the swallowed object is radio-opaque, a single frontal radiograph that includes the neck, chest, and entire abdomen is usually sufficient to locate the object.

The actual incidence of foreign body ingestions is unknown. The most common causes of foreign body ingestion are accidental swallowing of objects. Children usually put any object they find into their mouths and may accidentally swallow them. In healthy adults, accidental swallowing often involves toothpicks, dentures and turban pins but Datun ingestion is not seen. Psychiatric patients may swallow a wide variety of objects, including large and bizarre

items. Although the majority of foreign bodies pass harmlessly through the GI tract and conservative management is generally recommended only 10% to 20% of them will require non-operative intervention such as endoscope, and approximately 1% of them will require surgery [20-22].

Foreign body ingestions necessitate careful and continued observation due to the possibility of serious complications. The abdomen should be examined for clinical evidences of peritonitis. These conditions will require emergent surgical interventions. In our knowledge, this is a unique case that we have described “a foreign body (datum) is resulting in gastric perforation”.

The incidence of Datun ingestion is unknown. This case report describes a very rare case in which Datun retained in the stomach causing gastric perforation. To the best of our knowledge, this is the first case report of this type of gastric perforation. Furthermore, a bolus may become stuck during ingestion of food, resulting in the clinical presentation of a foreign body impacted in the esophagus. Swallowing of foreign bodies is most common in children aged between 6 months and 6 years [23].

The diagnosis of an ingested foreign body is made primarily on the basis of the patient’s medical history. This means that the type of diagnostic evaluation and the extent and urgency of a possible intervention are decided on the basis of the information gained about the ingested foreign body, subjective complaints, and the clinical findings [24]. Since endoscope techniques have progressed, the surgery takes more of a back seat. The absolute indication for surgery exists only in case of perforation. Relative indications for surgery after ingestion of foreign bodies exist in the case of complications that cannot be resolved endoscopically or after unsuccessful attempts of endoscope [24].

CONCLUSION

Gastric perforation secondary to foreign body ingestion should be included in the differential diagnosis of these atypical cases of abdominal pain, especially if patient gives such history. Ingested foreign body in most scenarios passes spontaneously and infrequently causes severe problems though the size and nature of the foreign body may be a limiting factor. Complications such as perforation should be always kept in mind and in these cases urgent open surgical intervention should be done.

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