Spontaneous passage of long, sharp gastrointestinal foreign body in a child

Abstract

Foreign body (FB) ingestion is a common problem in children. Up to 90% of these FBs pass spontaneously. FBs reaching the stomach usually pass out spontaneously. Exceptions to this spontaneous passage include a long FB that cannot cross the pylorus, duodenum or ileocaecal junction. We present a case of a 9-year boy who accidentally ingested a long paper pin, which spontaneously passed in 26 h. This case is being reported to highlight the successful spontaneous passage of a 4 cm long sharp foreign body in a child.

Background

Ingestion of foreign bodies (FB) is a common problem in the paediatric population. Normally, 80–90% of these FBs pass spontaneously and 10–20% require endoscopic removal.1 Surgical intervention is indicated in less than 1% of children.2 FBs in the stomach usually pass out. Exceptions to spontaneous passage include a long FB that cannot cross the pylorus, duodenal loop or ileocaecal valve.3 This case is being reported to highlight successful spontaneous passage of a long sharp foreign body in a child.

Case presentation

A 9-year-old boy presented to the emergency ward with history of having swallowed a paper pin at his school 10 h earlier. He was asymptomatic and clinical examination was unremarkable.

Investigations

Plain abdominal radiograph showed a long paper pin in the region of the fourth part of the duodenum/proximal jejunum (figure 1) and it was confirmed on fluoroscopy (figure 2). Plain chest radiograph showed no pneumoperitoneum or pneumomediastinum. Neck radiograph revealed no subcutaneous or prevertebral emphysaema.

Plain radiograph of the abdomen showing a long linear radiopaque foreign body in the abdomen, in the region of the fourth part of the duodenum/proximal jejunum (10 h after ingestion).

Fluoroscopy image confirming the position of the foreign body in the fourth part of the duodenum/proximal jejunum.

Treatment

As the boy did not show evidence of impaction or perforation and as the swallowed object was a sharp foreign body, he was admitted and serial radiographs were taken.

Outcome and follow-up

Twelve hours later, the pin had moved to the ileum on abdominal radiograph (figure 3) and fluoroscopy and 16 h later (26 h from ingestion) he passed the 4 cm long paper pin per rectum (figure 4). Post

passage X-ray confirmed complete expulsion. He had no complications and was discharged the next morning.

Plain radiograph of the abdomen showing the foreign body in the region of distal ileum (12 h after ingestion).

Photograph showing a 4 cm long paper pin passed spontaneously by the child (26 h after ingestion).

Discussion

FB ingestion is a common problem in the paediatric age group with 75% cases seen in children under 4 years of age.4 Most ingested FBs pass through the gastrointestinal tract (GIT) spontaneously5 and without complications. Impaction is most commonly seen at anatomic constrictions in the oesophagus6 and in over 75% patients, the commonest site is upper oesophagus at the cricopharyngeus.6 Beyond the gastro-oesophageal junction, FBs usually pass through the GIT without complications7 and impaction in the intestines is seen in less than 10% children.1 FB impaction leads to mucosal abrasions, bleeding, GI perforation, secondary mediastinitis and peritonitis,1 and hence impaction is a strong indication for removal. The clinical spectrum of FBs in GIT can range from being asymptomatic to having GI symptoms such as vomiting, drooling, dysphagia, odynophagia, globus sensation or respiratory symptoms such as coughing, stridor and choking. In a review of paediatric foreign body ingestion, it was noted that spontaneous passage rates were described in just over a third of the studies1 and that the spontaneous passage rate was higher in stomach and intestine FBs as compared with oesophageal FBs. If stomach and intestinal FBs are managed conservatively, patients can be safely discharged home. FBs impacted in the upper oesophagus often require medical intervention.1 8

Children commonly ingest sharp objects such as fish and chicken bones, pins, needles, tooth picks, nails and even sharp toys. A single straight pin usually passes as it normally travels blunt end first as it traverses the GIT, following Jackson's axiom that, 'advancing points perforate and trailing points do not.'9 Removal of sharp FBs even if they have reached the stomach1 is advocated due to the sharp increase in complication rates from 1% to 15–35%.10 Ingested sharp FBs get impacted in the intestinal mucosa, which can erode into the peritoneal cavity or directly perforate the intestinal wall.1 Sharp objects that are not amenable to endoscopic removal need to be followed up with daily radiographs, and surgical removal should be performed if the sharp FB fails to progress in 3 days.5

Sharp FBs reaching the stomach can usually pass spontaneously down the bowel. Exceptions to spontaneous passage of such sharp FBs are when the large FB cannot negotiate the pylorus, duodenal C-loop or ileocaecal valve.3 Normally, 80–90% of FBs pass spontaneously through the GIT but 10–20% will require endoscopic removal and less than 1% will need surgical intervention.2