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Endoscopic Retrieval of an Intentionally Ingested Mobile Phone in an Adult: First Case Report of its Kind

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Abstract

It is not uncommon to receive patients in the Accident and Emergency department with history of food bolus impaction in the upper gastro-intestinal tract or of ingestion of foreign bodies. We present a rare and unusual case of mobile phone ingestion that was retrieved successfully from the stomach by flexible upper gastro-intestinal (GI) endoscopy at our hospital. We did not find any other case report of mobile phone ingestion followed by successful endoscopic retrieval in the available English medical literature.

Introduction

It is not uncommon to receive patients in the Accident and Emergency department with history of food bolus impaction in the upper gastro-intestinal tract (GIT) or of ingestion of foreign bodies. Majority of these patients belong to the pediatric population but may also involve adult patients, particularly those with history of alcohol intoxication, learning disabilities, swallowing disorders and psychiatric problems [1]. Most food boluses and foreign bodies will pass spontaneously through the intestinal tract without causing any acute or long-term complications. However, some patients will need urgent or early endoscopic intervention and rarely, surgical intervention to retrieve the ingested foreign bodies to minimize the risk of complications [2]. The ingested material may be small, large, blunt, sharp or of unusual shape. These objects range from un-chewed food boluses, fish bones, coins, dentures, toys, needles and razor blades [3]. Urgent or early upper gastro-intestinal tract endoscopy is an important diagnostic as well as therapeutic tool and is successful in 95% of the cases [4]. Usually foreign bodies which are small, smooth and rounded will pass without difficulty; however, large, pointed and irregularly shaped foreign bodies pose greater risk of complications. Thus, one has to consider some form of retrieval technique (endoscopic or surgical). Both flexible and rigid endoscopes are useful in such situations, depending on the nature and size of the object, and if required, over tube may be used to minimize damage to the oesophagus.

We present a rare and unusual case of mobile phone ingestion that was retrieved successfully from the stomach by flexible upper gastro-intestinal (GI) endoscopy at our hospital. We did not find any other case report of mobile phone ingestion followed by successful endoscopic retrieval in the available English medical literature.

Case Presentation

A 30-year-old gentleman attended the Accident and Emergency (A&E) department at Tameside Hospital NHS Trust with a history of ingestion of mobile phone eight weeks earlier. The reason for phone ingestion was to avoid detection and losing the phone to the prison authorities while being detained in prison. The patient had no previous history of any medical or mental health problems, and this was the patient first ever presentation to the hospital. According to the patient, he had wrapped the cell phone (with the battery in-situ) in two plastic bags before swallowing. The patient did not have any symptoms for the first six weeks; however, in the two weeks previous to presentation, he started to have intermittent nausea, vomiting and abdominal cramps. These symptoms were worse after eating food but minimal after drinking fluids. On examination in A&E, he was haemodynamically stable with a normal pulse, blood pressure and oxygen saturation. Abdominal examination revealed no signs of peritonism or peritonitis to suggest a viscus perforation (such as abdominal tenderness, guarding or rigidity). An urgent erect chest and abdominal X-rays were performed the same day in the Emergency department which confirmed the presence of the mobile phone in the stomach (Figure 1 and 2). The stomach looked distended (seen on both the antero-posterior and lateral views) but there was no free gas under the diaphragm on the erect chest radiograph to suggest perforation.

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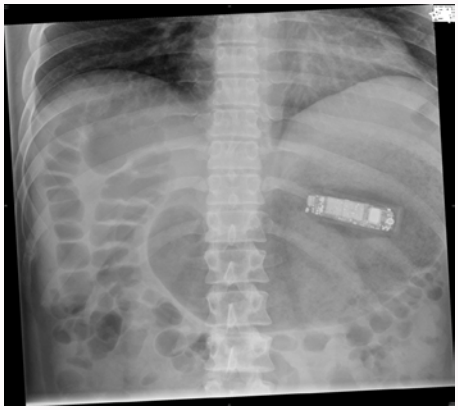

Figure 1: Abdominal X-ray showing mobile phone in stomach.

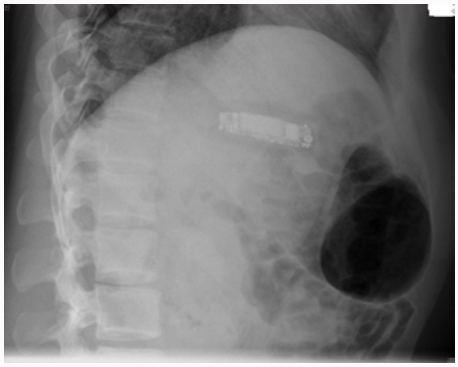

Figure: 2: Lateral view abdominal X-ray.

Figure 3: Endoscopic view of the plastic bag containing the mobile phone.

The patient was kept overnight for observation, with no acute concerns reported during his stay. He was reviewed the next morning and his case was discussed with the upper GI consultant surgeon for possible endoscopic retrieval of the phone. As there was no evidence of peritonism or peritonitis, it was decided to discharge the patient home and was booked on the next available therapeutic endoscopy list. The phone dimensions were confirmed before the procedure by looking up the phone details over the internet as well as the X-ray radiograph. The patient was advised to take a soft diet and report to the A&E department in the event of worsening symptoms while waiting for the endoscopy.

The therapeutic upper GI endoscopy was performed five days later. The procedure was performed under Xylocaine local oral spray and heavy sedation (Fentanyl 100 micrograms; midazolam 2 mg). The mobile phone was successfully retrieved endoscopically using a large

Figure 4: Mobile Phone covered in plastic bag.

Figure 5: Mobile phone retrieved.

endoscopic snare without any immediate or delayed complications. The plastic wraps were still intact containing the phone (Figure 3 and 4). The mobile phone retrieved was confirmed to be Zanco Mini with 0.66 inch LCD screen. The dimensions of the phone were: 71.8 mm x 23.5 mm x13.0 mm and weighed about 20 grams (Figure 5).

Although the procedure was uncomfortable for the patient, re-scoping did not show any mucosal damage to the oesophagus or gastro-oesophageal junction. The patient had a smooth post-procedure recovery and was discharged home the same day with no further follow-up.

Discussion

Intentional or accidental ingestion of foreign bodies is common in the pediatric population and not unusual in adults. Most patients are asymptomatic and the foreign bodies will pass through the gastro-intestinal tract without causing any significant harm, and these patients will usually settle with reassurance and advice. However, some patients will present with odynophagia, dysphagia, nausea, saliva drooling, vomiting, chest and abdominal pain, and these symptoms will depend on the type of the object ingested. Sharp objects may cause bleeding, fistula formation and visceral perforation. Even acute appendicitis has been reported as a result of foreign body ingestion [5]. Large objects may also cause bowel obstruction necessitating exploratory laparotomy. The common sites of foreign body impaction are crico-pharyngeus, gastro-oesophageal junction, pylorus and the ileo-caecal valve. These patients will need a thorough history taking and clinical examination on presentation. Small objects stuck at the crico-pharyngeal level may be removed in the A&E department by an experienced clinician. However, other patients will require radiological or endoscopic investigations. Plain X-rays of the

neck, chest and/or abdomen is a useful early investigation to localize the object. Further radiological follow-up may be required if the foreign body is radio-opaque in order to follow the movement of the object and to confirm its exit from the body. CT scan of the chest and abdomen may be needed in the difficult or clinically significant cases. A handheld metal detector has been shown to be safely and reliably used in lieu of plain radiography to investigate children with a history of metallic foreign body ingestion [6].

Mobile phone ingestion is unheard of in medical history. The patient in our case report had wrapped the phone in two layers of plastic bags before ingestion and therefore had no serious consequences as the phone battery was still intact and not affected by the stomach juices, however, the mere presence of the phone could have caused gastric perforation due to its pressure effect. We were comfortable to wait for 5 days to get the case done on an ideal therapeutic list performed by an upper GI surgeon due to the fact that the phone was wrapped in plastic covers and also, necessary surgical expertise was available in case of gastric or oesophageal perforation. Also, the size of the mobile phone in our case report was small but we believe that any bigger size would have been extremely difficult to be swallowed in the first place. We recommend that all such cases should be investigated with early flexible endoscopy and assessed for endoscopic retrieval. It is crucial that the procedure is carried out by an experienced endoscopist with necessary interventional expertise and arrangements made ready for surgical exploration in case of failed endoscopic intervention. Our case report highlights a potential problem in the modern era of growing technology and manufacture, and opens a window for discussion on the best clinical management of such cases. We anticipate that with popularity of the mobile phones and the utter dependence on them, more such cases will be reported.

Learning Point

Clinicians need to be aware of the variety of objects that can be intentionally or accidentally swallowed, especially the gadgets of the modern world and the associated complications that these objects pose. Upper GI endoscopy is an important tool to investigate and retrieve ingested foreign bodies. It is important to get a good idea of the size and dimensions of the ingested object before retrieval is attempted in order to avoid visceral damage or perforation, and arrange surgical exploration if required.

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