Brunei International Medical Journal

OFFICIAL PUBLICATION OF
THE MINISTRY OF HEALTH
AND
UNIVERSITI BRUNEI DARUSSALAM

Volume 17

15 May 2021 (3 Syawal 1442H)

NOT AN IDEAL WAY OF DISPENSING A TABLET: A COMMON ERROR CAUSING ESOPHAGEAL IMPACTION IN AN ELDERLY PATIENT.

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ABSTRACT

Accidental foreign body ingestion is a common problem in geriatric population. An elderly patient admitted with fracture of right proximal femur complained of difficulty in swallowing of 2 days duration. OtoRhinoLaryngology and Gastroenterology consultation and investigations confirmed the cause to be due to an impacted Press-through tablet ingested by the patient with its packing. This was successfully removed by rigid endoscopy without any complications. Such errors are common but fortunately seldom lead to complications. They are best remedied by removing all packing before giving tablets to patients during drug dispensing rounds.

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Brunei Int Med J. *2021;17:65-69*

ISSN 1560 5876 Print
ISSN 2079 3146 Online

Online version of the journal is available at www.bimjonline.com

Brunei International Medical Journal (BIMJ)
Official Publication of
The Ministry of Health
and
Universiti Brunei Darussalam

ISSN 1560-5876 Print
ISSN 2079-3146 Online

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Acknowledgements
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ABSTRACT

Accidental foreign body ingestion is a common problem in geriatric population. An elderly patient admitted with fracture of right proximal femur complained of difficulty in swallowing of 2 days duration. OtoRhinoLaryngology and Gastroenterology consultation and investigations confirmed the cause to be due to an impacted Press-through tablet ingested by the patient with its packing. This was successfully removed by rigid endoscopy without any complications. Such errors are common but fortunately seldom lead to complications. They are best remedied by removing all packing before giving tablets to patients during drug dispensing rounds.

Keywords: Dysphagia, Esophagus, Endoscopy, Foreign body, Press-through package.

INTRODUCTION

Foreign body (FB) ingestion is a common clinical problem and a subject of a number of reviews and guidelines.[1-4]

In elderly patients, accidental ingestion of sharp objects including Press-through Packaged tablet (PTP) (also referred to as blister pack or pill in blister pack) is well recognised and in some cases it can lead to gastrointestinal perforation. Adequate imaging followed by endoscopic removal is necessary in most cases of PTP ingestion to avoid complications.[1-5]

We reported here a successful removal of an ingested PTP in an elderly patient with uneventful recovery. Although it is occasionally reported, such errors are common and fortunately seldom lead to complications. It is best remedied by implementing nursing protocol to remove all PTP before giving the tablets to patients during nursing drug dispensing rounds.

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CASE REPORT

A 74 year old elderly male patient was admitted to Orthopaedic ward, Raja Isteri Pengiran

Anak Saleha Hospital, for a fracture of right proximal femur after a fall at home. He had multiple medical co-morbidities including Diabetes mellitus, hypertension and chronic kidney disease. He had undergone coronary angioplasty less than a month before the fall and was on dual anti-platelet therapy. It was therefore decided to treat the fracture non-surgically. The patient was noted to have episodes of confusion and drowsiness during his previous admission. He also had visual impairment.

One week after admission, patient complained of throat pain of 2 days duration with difficulty in swallowing. He was referred to the OtoRhinoLaryngologists (ORL) for evaluation. The throat was found to be normal. Flexible nasoendoscopy in the ORL clinic showed no abnormality in the nose and nasopharynx. But in the larynx a white tablet was seen in the right pyriform sinus. The patient was given water to swallow and the tablet went down the esophagus. No pooling of saliva in the fossa was noted after that. However, patient continued to complain of dysphagia. Hence gastroenterology input was sought to rule out other pathology below the cricopharynx region.

OesophagoGastroDuodenoscopy(OGD) was planned under the care of Gastroenterologist to assess the esophagus. It revealed two-third luminal obstruction in the upper esophagus with a foreign body with a silver appearance embedded in the esophageal wall, initially suspected to be food bolus. It was not possible to remove the foreign body with biopsy forceps due to patient's discomfort.

CT scan of neck was performed on the next day which showed a 1.4 X 1.5 cm hyperdense foreign body in the upper esophagus at the level of C7 and T1 (Figure 1). A repeat OGD under sedation was performed 4 days later, where this time a metallic film was seen with its edges deeply embedded in the upper oesophageal mucosa and surrounded by food debris (Figure 2). Attempts to lift the foreign body with biopsy forceps failed and there was mucosal bleeding. Hence the procedure was abandoned.

After counseling and adequate preparation the patient underwent rigid oesophagoscopy 5 days later, jointly with the ORL surgeon. A silver substance was seen at 17cm from the incisor surrounded with food debris, which after removal with forceps was noted to be a PTP tablet with its aluminium foil packet still intact (Figure 3).

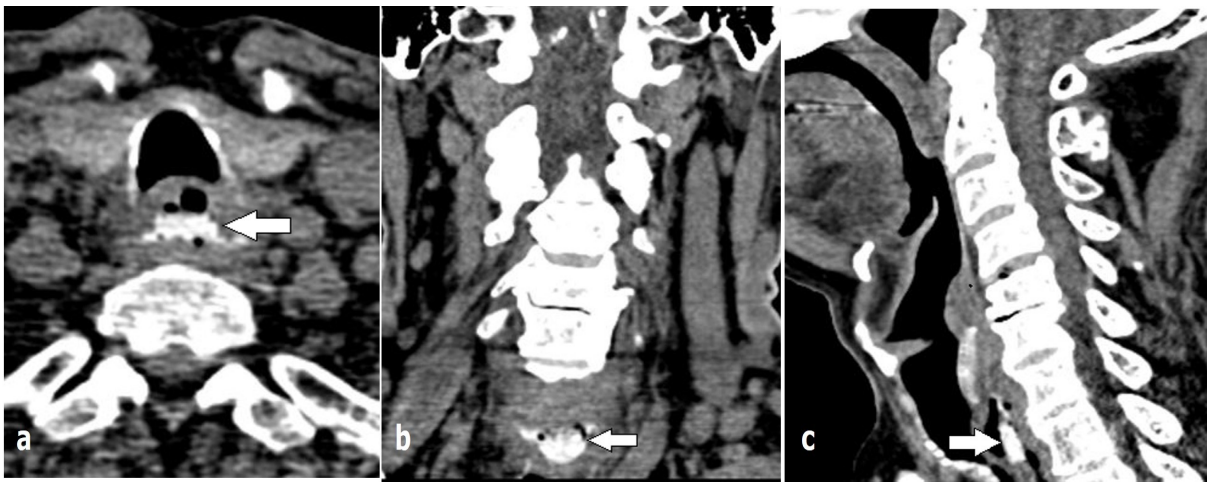

Figure 1: CT images showing the impacted FB (white solid arrow) at mid esophagus. a) axial plane, b) coronal section, c) sagital section.

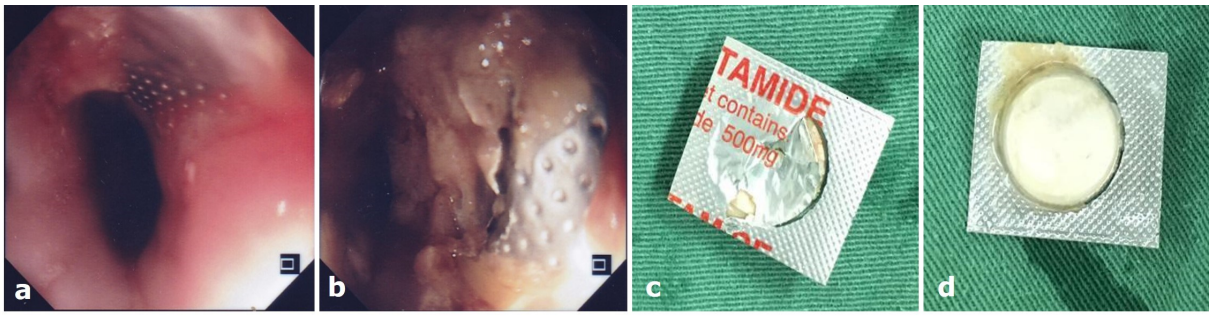

Figure 2: OGD images of the mid esophagus showing two-third luminal narrowing from an impacted silvery FB in the mucosal wall (a), with surrounding food debris (b). The FB was confirmed to be an intact PTP tablet (c and d) which was accidentally ingested whole by the patient. (Click on the image to enlarge)

A nasogastric (NG) tube was inserted as mild esophageal mucosal bleeding was noted. Mucosal tear could not be ruled out especially in consideration that the foreign body was embedded in the esophageal lining for a few days and the PTP had sharp edges. Patient remained asymptomatic post procedure. A follow up Barium swallow done 9 days after removal of PTP tablet showed free flow of contrast throughout the length of esophagus with no obstruction, stricture, filling defect, diverticulum or perforation. Normal mucosal pattern of esophagus and gastroesophageal junction was noted.

The patient's NG tube was then removed. He remained well and tolerated normal oral intake. He was eventually discharged 3 weeks later completion of non-operative treatment of the fracture of right proximal femur.

DISCUSSION

Accidental ingestion of FB is a common presentation as an emergency. It is often quoted that in 80-90% of cases, the FB passed spontaneously through the gastrointestinal tract. In 10-20% of cases, FB removal is necessary and in 1-4 % surgery may be needed.[2,3,5,6] The incidence of perforation has been reported to be about 35% after ingestion of sharp FB like a PTP.[2,7]

The esophagus is the most common site for impaction of ingested FB in patients over the age of 65 years. In those who have accidentally ingested a tablet, in 83.3% of cases, its presence is noted in the esophagus.[1] A systematic review of esophageal FB in adults, confirmed upper esophagus to be the most common site (67%) and sharp objects as the most common FB (38%). The common presenting symptoms were retrosternal pain (78%), dysphagia (48%) and odynophagia (43%).[5] In a large series from Japan, 50% of patients were between 60 – 79 years of age and PTP was the most common FB in 33.5% of cases. In 40% of cases it was noted in the laryngopharynx and in esophagus in 48.5%. In 83.3% of these cases successful removal was done using a large caliber soft oblique cap and grasping forceps.[4] PTP are commonly dispensed by cutting individual tablets which are square in shape with sharp edges and would have a tendency to get trapped within the esophagus.

Guidelines are available from most medical societies for management of ingested esophageal FB including food impaction. These relate the timing¸ medical management and indication of endoscopy and various devices to be used.[1-3] The most appropriate procedure in a case is determined by patient factors like age and comorbidities, type and size of the FB, site and time of impaction and skills of the treating physician.[2,3] It is generally agreed that ingested sharp objects

should be removed within 24 hours.[1-3] A delay of more than 24 hours is associated with decreased chances of successful removal and increased chances of complications.[3]

Various esophageal pathologies including achalasia, stricture, eosionophilic esophagitis etc., may encourage impaction of the ingested FB and an accurate diagnosis of underlying motility disorder is stressed after the first episode of esophageal impaction. [3,5] In adults, ingestion of FB is more common in those with psychiatric problems, alcohol intoxication, mental retardation and those who are incarcerated.[4]

A systematic review and meta-analysis found flexible endoscopy and rigid endoscopy to be equally safe and effective in removal of ingested FB. Rigid endoscopy has certain advantages. It provides a wide operating lumen for manipulation of sharp FB, use of a variety of instruments and protection of airway as the procedure is done under general anaesthesia. In view of the above issues, it has been suggested that a patient with accidental ingestion of FB should be managed by a multidisciplinary team with essential training and skills in the techniques involved.[8]

The ingested PTPs are difficult to detect on plain radiographs as they are translucent. CT has higher sensitivity in detecting PTPs and is particularly useful in patients who continue to have symptoms with a negative endoscopy.[7]

An interesting study with bearing on prevention of accidental ingestion of PTP was conducted by Tamura *et al*.[6] They evaluated the risk of esophageal damage from different material using porcine esophagus. They observed degree of damage to be highest from a disposable scalpel followed by polyvinylidine chloride (PVDC) – coated polyvinyl chloride (PVC) PTP. The soft material PTP and round PTP using PVC caused the least damage and its use have been suggested to reduce the risk of damage from accidentally ingested PTP. [6] A change in the material used for PTP has also been suggested by Limpias Kamiya *et al*.[4] Another approach suggested is to increase the radio-opacity of the PTP to allow easier detection on plain radiographs.[7] For elderly patients at high risk, we suggest dispensing the tablet after completely removing it from the PTP to avoid accidental ingestion.

In the case reported here, which presented as dysphagia, the FB could be identified on CT scan. A rigid esophagoscopy was advised with its advantages mentioned earlier and the PTP could be removed successfully. A postoperative barium swallow ruled out any underlying pathology in the esophagus. The likely reason for accidental ingestion of PTP in our patient seems to be his episodes of drowsiness and confusion as well as visual impairment.

CONCLUSION

In conclusion, patients complaining of dysphagia a few days after admission, should be suspected of FB impaction and be fully investigated with multidisciplinary involvement. Learning from this case, to avoid future incidents from occurring, we suggest a change in ward protocol for dispensing medications to patients by removing all PTP prior to giving the tablets to patients especially to eldely patients and those with risk factors such as psychiatric problems, alcohol intoxication, mental retardation and those who are incarcerated.

CONFLICTING INTEREST

We declare that we have no conflict of interest.

INFORMED CONSENT

Verbal informed consent (verbal) was obtained from the patient for publication of the images.

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