


# Retrieval of a sewing needle from the third part of the duodenum with overtube endoscopy

Chamila Lakmal<sup>1</sup>, Indunil Liyanage<sup>1</sup>, Sanjeev Vignesvaran<sup>1</sup>, Aloka Pathirana<sup>2</sup>

<sup>1</sup>University Surgical Unit, Colombo South Teaching Hospital, Kalubowila, Sri Lanka.

<sup>2</sup>Department of Surgery, University of Sri Jayewardenepura, Nugegoda, Sri Lanka.

**Correspondence:** Dr. M.A.C.S. Lakmal  
e-mail: lakmalmac@gmail.com  
 <https://orcid.org/0000-0003-3867-7861>

Submitted on 24.05.2022 and accepted for publication on 12.12.2022

## Introduction

Foreign body ingestion is not an uncommon presentation to surgical casualty. Endoscopic retrieval is less invasive treatment compared to surgical interventions. But extreme caution is required when retrieving sharp objects to prevent inadvertent damage to the wall of the gastro-intestinal tract. We report a case of successful retrieval of a sewing needle from the duodenum using over-tube endoscopy. Overtube was used to protect the oesophagus from inadvertent injury during the withdrawal of the needle.

## Case history

A 23-year-old female presented to the surgical casualty of the University Surgical Unit of the Colombo South Teaching Hospital, 6 hours after accidental swallowing of a hand-sewing needle. She was asymptomatic and clinically stable. Plain radiography showed a needle at the epigastric region. Non-contrast computer tomography (NCCT) revealed the needle to be in the third part of the duodenum without evidence of perforation.

Diagnostic upper gastro-intestinal endoscopy (UGIE) was performed to confirm the site of the needle. It was seen in between second and third part of the duodenum, almost sticking to the mucosa. Decision was taken to use an overtube to prevent possible inadvertent sharp injury to the oesophagus during withdrawal of the needle.

Overtube (*Guardus*<sup>TM</sup> overtube - oesophageal, US endoscopy) was inserted and the UGIE was advanced again through the over tube. A rotatable grasping forceps (*Olympus*<sup>TM</sup>, Japan, FG-44NR-1) was used to grasp the eye of the needle. Needle was withdrawn, with the scope, carefully through the pyloric opening to the stomach. Distal end of the overtube was almost at the gastro-oesophageal junction. Then the scope was withdrawn into the overtube with the needle and taken out successfully. Patient did not have post-procedure complications and was discharged the following morning.



**Figure 1:** Needle seen in Non-contrast CT  
(Yellow arrow)



**Figure 2:** Overtube

## Discussion

Foreign body ingestion is not an uncommon presentation to surgical casualty. Complications such as perforations, infection and death have been documented with foreign body ingestion. Migration of sharp foreign bodies to the peritoneal cavity and to other visceral organs like liver and pancreas have been reported (1 - 3).

Depending on the type and the site of the foreign body, removal can be challenging. Therefore, detecting the correct position of the foreign body is essential. Computed Topography (CT) is considered as the best method to accurately locate the site of foreign bodies (4).

If the object has migrated out of the gastrointestinal tract into the peritoneal cavity or to another organ laparoscopy or laparotomy is needed (1-3). When a foreign body is within the reach of an upper GI endoscope, endoscopic removal can be considered, avoiding a major surgery (5).

However, extreme caution is required when removing sharp objects endoscopically, as it can damage the wall of the GI tract. Covering sheath for the forceps which is holding the sharp object has been used successfully to remove multiple needles in the duodenum (5). Forceps which holds the object securely is of paramount importance. The type of forceps best suited depends on the nature of the object to be grasped. Since the sewing needle had an “eye”, the forceps we used (rotatable grasping forceps, Olympus, Japan, FG-44NR-1) was well suited.

An overtube is a sleeve-like conduit which facilitates passage of the scope while protecting the airway, especially during removal of foreign bodies. It also protects the oesophageal mucosal injury during sharp object retrieval. It can also be used in patients with challenging anatomy and to keep the access

for procedures which needs repeated insertion of scope (6, 7). Cases of gastric foreign body removal with the use of overtube have been reported in international literature, but this is the first such case from Sri Lanka to the best of our knowledge.

Use of overtube is specially described in removal of longer foreign bodies (longer than 6 cm) like tooth brushes as this will help to negotiate unfavourable angles. The object should be manipulated into the overtube with suitable graspers or snare and the withdrawal of the whole apparatus (i.e., foreign body, endoscope and overtube) is recommended to avoid losing of the grasp (7).

Learning points,

- Detection of the correct location of the foreign body is vital
- Overtube is a safe device to protect the oesophagus while retrieving a sharp foreign body endoscopically.

*The patient gave informed, written consent for publication of this article including pictures.*

Authors wish to declare that there are no competing interests. The usage of trade names in presentation of information in this case report was purely for educational purposes and there is no financial relationship with other people or organizations what so ever.

## References

1. Pathirana AA, Manawasinghe UG, Karunaratne NP, Thusyanthan V. A foreign body in liver mimicking an intrahepatic cholangiocarcinoma. *The Ceylon Medical Journal*. 2016 Jun; **61**(2): 87. DOI: 10.4038/cmj.v61i2.8296
2. Toyonaga T, Shinohara M, Miyatake E, Ouchida K, Shirota T, Ogawa T, Yoshida J, Sumitomo K, Matsuo K, Akao M. Penetration of the duodenum by an ingested needle with migration to the pancreas: report of a case. *Surgery Today*. 2001 Jan 1; **31**(1): 68-71. DOI: 10.1016/j.ijscr.2016.05.043
3. Lanitis S, Filippakis G, Christophides T, Papaconstandinou T, Karaliotas C. Combined laparoscopic and endoscopic approach for the management of two ingested sewing needles: one migrated into the liver and one stuck in the

- duodenum. *Journal of Laparoendoscopic & Advanced Surgical Techniques*. 2007 Jun 1; **17** (3): 311-314. DOI: 10.1089/lap.2006.0106
4. Kim SH, Shin SS, Jeong YY, Heo SH, Kim JW, Kang HK. Gastrointestinal tract perforation: MDCT findings according to the perforation sites. *Korean Journal of Radiology*. 2009 Feb 1; **10**(1): 63-70. DOI: 10.3348/kjr.2009.10.1.63.
  5. Enjoji A, Nagata Y, Furuichi A, Kawakami S, Saiwai H, Furui J, Kawazoe K, Kanematsu T. Successful removal from the duodenum of swallowed sewing needles using devised endoscopic forceps. *Endoscopy*. 2004 Feb; **36**(02): 193. DOI: 10.1055/s-2004-814194.
  6. Tierney WM, Adler DG, Conway JD, Diehl DL, Farraye FA, Kantsevoy SV, Kaul V, Kethu SR, Kwon RS, Mamula P, Pedrosa MC. Overtube use in gastrointestinal endoscopy. *Gastrointestinal Endoscopy*. 2009 Nov 1; **70**(5): 828-834. DOI: 10.1016/j.gie.2009.06.014
  7. Malick KJ. Endoscopic management of ingested foreign bodies and food impactions. *Gastroenterology Nursing*. 2013 Sep 1; **36**(5): 359-365. DOI: 10.1097/SGA.0b013e3182a71f92