

## Endoscopic Extraction of a Foreign Body: From Bench to Bedside

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### 1. Abstract

Rectal foreign bodies are a common and challenging finding. Here, we present the case of a man who presented to A&E with a courgette. A comprehensive radiological workup and a preliminary simulation of the endoscopic technique led to a successful treatment of the case.

### 2. Introduction

Rectal foreign bodies are common findings in Accident and Emergency (A&E) as well as in the outpatient departments [1]. In most cases, rectal foreign bodies are mainly inserted anally. Less frequently, they may be ingested and migrate through the gastrointestinal tract until they reach the distal part [2]. A multitude of objects have been described as rectal foreign bodies, such as sexy toys, razor, screw, screwdriver, hairpin, can opener, drill bit, stick, broomstick, glass bottle, glass, porcelain cup, spray can, light bulb, candle, bocci ball, ping-pong ball, ammunition, firecracker, vibrator, eyeglasses, toothpick, suitcase key, toothbrush, ballpoint pen, enema tip, various types of vegetables, mobile phone [3, 4].

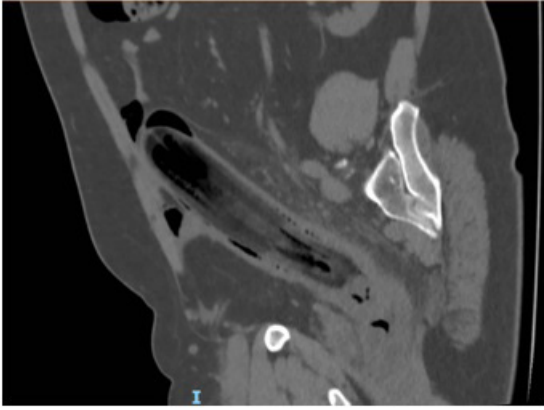
As the main driver for anal foreign bodies is sexual gratification, patients usually tend to under-report any anal symptom related to the presence of the foreign body, until it requires medical treatment. At this stage, the patient may present with constipation, diarrhoea, anal itching and an anal faecaloma. Most serious cases may progress to a medical emergency, such as abdominal pain, intestinal sub-occlusion or occlusion, rectal bleeding, intestinal perforation, peritonitis and septic shock [1].

### 3. Case Report

A 67-year-old man presented to A&E complaining of a foreign body in the sigma. Of note, in his medical history there were few episodes of rectal foreign bodies, which were expelled spontaneously. In this latest occasion, the patient reported the use of a courgette, which he was not able to remove.

Clinically, the patient presented abdominal pain and signs in keeping with intestinal sub-occlusion. Once admitted to A&E, the man underwent X-ray of the abdomen which ruled out the presence of perforation. Of note, a CT scan of the abdomen revealed the presence of a foreign body, which was 20 cm long and 4 cm diameter. A multidisciplinary team, including surgical équipe and the digestive endoscopist, was discussing the case to identify the best treatment option for the patient.

While the team was waiting for the patient to be greenlighted for the COVID-19 measures, the Endoscopist simulated the endoscopic extraction of courgettes on the bench, using different approaches. Overall, using a diathermic snare, a net retrieval or an endo-loop with a clip failed to grasp the vegetable. Specifically, the use of a diathermic snare was not suitable as the foreign body tended to slip away due to the smooth surface. However, at a closer look, the Endoscopist noticed a small groove between the head and the body of the vegetable, which could have been used to extract the foreign body. It was also evident from the CT scan that the head (and the groove) of the courgette was facing the distal part of the anus, meaning that it could have been removed endoscopically (Figure 1).

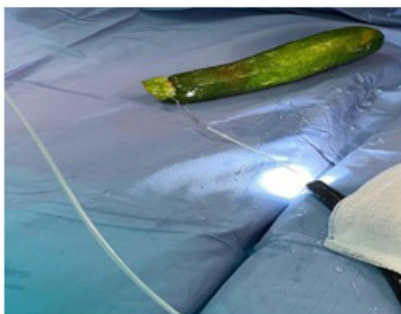


**Figure 1:** CT scan of the abdomen showing the presence of a 20 cm long foreign body in the rectum

As such, the patient was positioned into the operative room and was submitted at deep sedation by anaesthetist. Once the colonoscopy was started, the head of the courgette was noted at 20 cm from the anus (Figure 2). Therefore, the operator positioned the diathermic snare in the groove between the head and the body of the courgette, pulling the vegetable with small rotation and traction movements. As the anus was contracted, the courgette couldn't pass through. The passage was cleared, and the foreign body was removed after the administration of hyoscine butylbromide which reduced the spasm of the anal passage (Figure 3). A second look of the sigma did not reveal and mucosal lesions where the foreign body was lying. After the successful manoeuvre, the patient did not show signs or symptoms of bleeding or perforation and was discharged after 24 hours observation.



**Figure 2:** The head of the courgette was noted during endoscopy



**Figure 3:** The whole courgette was extracted endoscopically

#### 4. Discussion

Overall, when dealing with rectal foreign bodies, it is advisable that the following simple indications should be followed as per ten good clinical points:

- A careful clinical examination is required to rule out the presence of medical emergencies (such as perforation) which require urgent surgical treatment, while an endoscopic procedure could exacerbate the clinical picture.
- Endoscopic manoeuvres should be handled carefully, as they may cause further damage for the patient.
- A work-up based on imaging and/or medical history is required to understand whether the foreign body may be toxic or breakable.
- Moreover, an abdomen X-ray and a CT scan are advisable to study the foreign body and possible complications, such as perforation.
- Techniques for foreign bodies removal are not universal and might need to be adjusted on a case-to-case basis.
- Specifically, it might be necessary to study and observe similar objects on the bench in order to establish the best approach.
- Endoscopic manoeuvres may require patient's collaboration or the patient to be deeply sedated – depending on single cases, with presence of anaesthetist.
- If the foreign body is radiopaque, it might be useful to use fluoroscopy during the endoscopic extraction.
- A second look after the removal of the foreign body is necessary to rule out lesions related to the endoscopic procedure.
- The patient must stay overnight for 24 hours to rule out complications such as bleeding, perforation or sepsis; psychological support may help the patient to minimize the risk of relapsing.

#### 5. Conclusions

Rectal foreign bodies are observed very commonly in the tertiary care centres. As there is multitude of possible foreign bodies that can be impacted in the rectum, it is strongly recommended to carry out a thorough radiological workup of the patient and to simulate extraction before starting the actual procedure. This will increase the success rate of an uneventful removal of the foreign body.

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