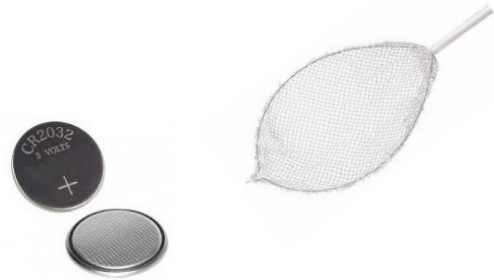


Foreign body: battery

Patient details

Name:	Mr. de Vries
Age:	74
Indication:	Ingested foreign object
Treatment:	Gastroscopy (sedated)
Allergies:	None
Medication:	Long-acting insulin Atenolol
Anamnesis:	Diabetes mellitus type 1 Hypertension



Foreign bodies are also referred to as *Corpus alienum*.

Introduction

On Saturday morning a gastroscopy is announced. The patient ended up in the emergency room via the gp's office. His wife does the talking. She explains that her husband has been a little confused lately and that the battery that was intended for his glucose meter has disappeared. She suspects her husband swallowed it. At the beginning of the evening, he suffered from an annoying sensation behind his sternum. She is concerned about this and therefore contacted the gp's office this morning.

Dangers of ingested batteries

When a battery makes contact with moist mucous membranes, the possible resulting electrical current can cause tissue damage. This electrical current is the main mechanism by which swallowing batteries causes damage. In addition, the chemical contents of the battery may leak, which can lead to etching and even necrosis, which can result in perforation. In addition, resorption of heavy metals can take place in the blood and direct mechanical pressure of the battery on the mucous membranes can lead to damage.

An X-ray has been taken and a button-cell battery located in the stomach. In consultation with the gastroenterologist, a gastroscopy is planned with the aim of removing the object. The endoscopy assistants prepare the endoscopy unit to perform the gastroscopy under sedation and prepare the materials that may be needed to remove the object.

Possible materials

1. Removal net (Roth Net)
2. Grasper (Raptor grasping device)
3. 4-pronged grasper (Talon grasping device)
4. Polypectomy snare
5. Basket
6. Overtube (Guardus overtube)
7. Foreign body hood protector (hood)

Treatment

The patient is in the endoscopy unit. After being connected to the monitoring equipment and oxygen, a time-out procedure is performed. The patient appears tense, sweat drops are visible and he is trembling. His blood glucose is measured and turns out to be 3.5 mmol/l. A glucose IV drip is connected for this reason.

Due to the frailty of the patient, low-dosage sedation is given. The gastroenterologist starts the gastroscopy. Two necrotic ulcerations are seen on either side of the distal esophagus. This indicates

Tip

Each material requires a different technique. It is important to take this into account to work effectively. Look in the hospital's document management system for the current protocol and/or consult the manufacturer's recent documentation.

that the battery was likely stuck above the lower sphincter. The battery is found in the antrum of the stomach.

The patient becomes restless and to ensure safety, the gastroscope is removed from the patient.

To resume treatment, the gastroenterologist decides to take the following measures:

1. Administer extra sedation. The monitoring values are good.
2. Place a hood on the tip of the gastroscope to safely remove the object.
3. Remove the object with a Roth Net.
4. If one of these methods does not work, opt to use other (prearranged) equipment.

Completion

The goal of the procedure has been achieved; the object has been removed. The patient remains connected to the monitoring equipment for an hour for observation. Blood glucose is rechecked. The necessary documentation is reported in the electronic patient file. All materials are cleaned up.

The further policy for the patient consists of:

1. At least one night hospital stay for observation.
2. Proton pump inhibitor drugs until the check-up gastroscopy in over 2-4 weeks.
3. Daily tracking of the blood glucose.
4. Discuss the confusion with the patient and his partner. Possibly consult with a geriatrician.

Sources used (in Dutch):

1. NTvG article - <https://www.ntvg.nl/artikelen/actief-beleid-bij-een-kind-dat-een-knoopbatterij-heeft-ingeslikt/volledig#LIT7>
2. ESGE Directive - <https://www.esge.com/removal-of-foreign-bodies-in-the-upper-gastrointestinal-tract-in-adults-european-society-of-gastrointestinal-endoscopy.html>