

# Extremely long retained foreign body of the oesophagus in a 4.5-year-old girl

Niezwyczajnie długo zalegające ciało obce w przełyku u 4,5-letniej dziewczynki

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**Słowa kluczowe:** ciało obce, przełyk, moneta.

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## Abstract

We present a case of an extremely long retained foreign body of the oesophagus (five groszy coin) in a 4.5-year-old girl. Due to high risk concerning perforation of the oesophagus wall (the presence of extensive ulceration around the coin and local wall rigidity) the foreign body was removed using the endoscopic method, but in the operating room with the possibility to start surgical intervention.

## Introduction

Foreign bodies of the oesophagus are objects that after entering the oesophagus become suspended on its wall or (due to their size and shape) it is not possible for them to enter the oesophageal lumen [1].

The majority of them (80-90%) can pass through the digestive tract by themselves and can be discharged naturally. It depends on their amount, size and shape, which is why foreign bodies larger than 2 cm and longer than 5-6 cm can be stopped at different segments of the digestive tract [2]. Most often foreign bodies in the oesophagus are located in the first isthmus of the oesophagus or just below (75.3% of cases), then in the second isthmus (21%) or just above the cardia (3.7%) [3].

Coins are the most common foreign bodies swallowed by children (58%) [4]. Clasps, needles, pins,

## Streszczenie

W pracy przedstawiono przypadek 4,5-letniej dziewczynki z bardzo długo zalegającym ciałem obcym w przełyku (moneta 5-groszowa). Ze względu na duże ryzyko perforacji przełyku (obecność rozległego owrzodzenia wokół monety i miejscowego usztywnienia ściany przełyku) ciało obce zostało usunięte endoskopowo w warunkach sali operacyjnej z możliwością rozpoczęcia interwencji chirurgicznej.

safety pins, buttons, drawing-pins, toys, nails and stones of fruits can be found rarely [4-6].

The following symptoms may be evidence of the presence of a foreign body in the oesophagus: lack of appetite, avoidance of solid food consumption in the diet, swallowing disorders, choking during swallowing, belching, persistent vomiting, retrosternal pain, hypersalivation, expectoration of bloody sputum, cough, and recurrent bronchitis [3-5, 7]. Foreign bodies in the oesophagus may not cause significant complaints in particular cases, for example coins that are placed in a vertical position [8].

Foreign body retention in the oesophagus is connected with risk concerning occurrence of serious complications. The following complications occur most frequently: perforation of the oesophagus, iatrogenic



**Fig. 1.** The presence of jammed foreign body 2 cm below the mouth of the oesophagus in endoscopic examination of the upper part of the gastrointestinal tract

**Ryc. 1.** Obecność ciała obcego 2 cm poniżej wejścia do przełyku w badaniu endoskopowym górnego odcinka przewodu pokarmowego



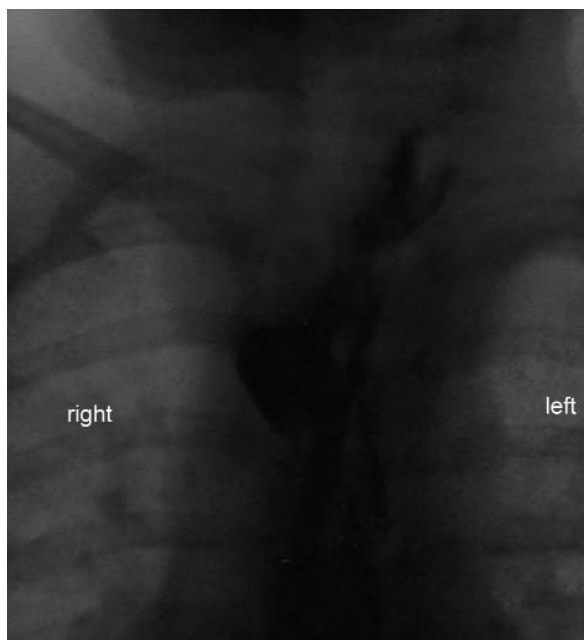
**Fig. 2.** Metallic shadow at the level of Th3 in the plain chest X-ray film

**Ryc. 2.** Metaliczny cień na poziomie Th3 na zdjęciu przeglądowym klatki piersiowej

perforation originating during foreign body removal, mediastinitis, fatal aortic haemorrhage [3, 9].

### Case report

The patient was admitted to the Department due to lack of appetite, swallowing disorders, periodic reluctance to consume solid food and recurrent vomiting. Symptoms had persisted for 2 years. The girl had not previously been hospitalized, but she often suffered from recurrent bronchitis and due to this fact she was under the care of the Allergology Outpatient Clinic. The general state of the child was good enough during admission. There were no significant abnormalities in physical examination. Body mass was 16.5 kg (25-50 centile), height was 107 cm (50-75 centile), BMI was 14.4 kg/m<sup>2</sup> (10-25 centile). There were no abnormalities in basic laboratory tests. Endoscopy of the upper part of the digestive tract showed a jammed foreign body (five groszy coin), 15 cm from the teeth line, 2 cm below the mouth of the oesophagus. An attempt to remove the foreign body without the possibility to start surgical intervention was not made due to the presence of extensive ulceration at the site of the foreign body and due to high risk of oesophageal wall perforation.



**Fig. 3.** Contrast retention in diverticulum of the size of 19 × 14 mm, arising from right side of the oesophagus, located at the level of Th3 (chest X-ray film with contrast)

**Ryc. 3.** Zaleganie kontrastu w uchyłku wielkości 19 × 14 mm zlokalizowanym na wysokości Th3 po stronie prawej przełyku (zdjęcie radiologiczne z kontrastem)

As the complement of medical history, the father informed about the possibility of the girl having swallowed a coin about 2 years earlier. A plain chest X-ray film was performed for accurate foreign body localisation in the oesophagus and a metallic shadow was found at the level of Th3.

Laryngological consultation finished with an ineffective attempt to remove the coin. The decision made after surgical consultation was that the foreign body would be removed endoscopically, but in the operating room, using general anaesthesia with the possibility to start surgical intervention. The coin was partially moved by a loop and Dormia basket, but subsequently was removed using a "butterfly net" (Roth Net) during the endoscopic procedure. The greatest problem was initial movement of the coin because of the presence of fibrin deposits and local wall rigidity.

Control chest X-ray film did not reveal features of air chamber in the mediastinum. The patient was again transferred to the Department of Paediatrics during the third twenty-four-hour period after the procedure. Therapy consisted of intravenous antibiotics (Amikin, Fortum, metronidazole), proton pump inhibitors (Gasec), intravenous hydration and feeding using a stomach tube.

The stomach tube was removed during the fifth twenty-four-hour period after the procedure and X-ray film of the oesophagus with contrast was performed. The anteroposterior projection proved contrast retention in the diverticulum of the size of 19 × 14 mm, arising from the right side of the oesophagus, localised at the level of Th3.

The girl was discharged from hospital to home in a generally satisfactory state with the recommendation to continue omeprazole use (once a day, fasting in the morning before the meal for 3 weeks) and pultaceous diet.

Two months after discharge the patient feels well, has a very good appetite, and her development is satisfactory – body mass – 19 kg (75-90 centile), height 109 cm (75-90 centile), BMI – 15.7 (50-75 centile).

## Conclusions

The duration of foreign body retention in the oesophagus varies. The majority of patients came during the first 5 days after swallowing [3]. However, there are some cases in which the foreign body can stay in the oesophagus for a longer period [7, 10]. It is often impossible to assess in children the precise time and circumstances of foreign body swallowing. In the present case, the parents reported that despite the coin

having possibly been retained for about 2 years, the girl had taken food normally and developed properly.

According to the Chevalier-Jackson rule, a foreign body should be removed using the way in which it entered the organism [11]. The endoscopic method with its efficacy of 92.3% is the best method to remove foreign bodies from the oesophagus. Risk of complications occurs in about 0.97% of cases [12]. However, situations connected with risk of oesophageal wall perforation make it is advisable to perform surgical oesophagus opening from outside: cervical oesophagotomy, transthoracic, transabdominal [13]. The presented case required a procedure of coin removal in general anaesthesia in an operating room with the possibility to start surgical intervention because of the excessive risk of oesophageal wall perforation (due to the presence of extensive ulceration around the foreign body and local wall rigidity).

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