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A Case of An Unusual Foreign Body in the Esophagus

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ABSTRACT Relevance. Esophageal foreign body may be safely removed with rigid esophagoscopy. However, endoscopic methods are not always successful, and this may require a surgery.

AIM OF STUDY We report a case of an unusual esophageal foreign body.

MATERIALS AND METHODS A 34-year-old male patient P. with a foreign body in the esophagus. Endoscopic, radiological, and laboratory diagnostic methods were performed to confirm a foreign body in the esophagus.

RESULTS A rare clinical observation of a 34-year-old male patient P. with a foreign body in the esophagus is presented (package with psychoactive substances). After an unsuccessful attempt to remove a foreign body using esophagoscopy, thoracotomy was performed and a foreign body was mechanically brought down into the stomach without opening the lumen of the esophagus. In the postoperative period, the condition was serious, the patient had been in coma for 10 days. There was hectic fever on day 7. On day 9, the left thoracotomy was performed, the revision showed no damage to the esophagus. Urine analysis for psychoactive substances was performed and detected tetrahydrocannabinol acid and aminochlorobenzophenone, a derivative of 1,4-benzodiazepine. On day 9, after repeated surgery, the patient confirmed the fact of swallowing a package of psychoactive substances, being conscious. On day 14 after the second operation, the patient was transferred to the regional narcological hospital.

CONCLUSION In patients with a foreign body in the esophagus in difficult clinical situations, it is necessary to collect anamnesis carefully, apply endoscopic, radiological and laboratory diagnostic methods, including urinalysis for psychoactive substances.

Keywords: foreign body in the esophagus, thoracotomy, mediastinitis, repeated toracotomy, tetrahydrocannabinol acid

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ACB — aminochlorobenzophenone,

CT — computed tomography

CO — chest organs

FBE — foreign body in the esophagus

FES — fibroesophagoscopy

PAD — psychoactive drugs

Accidental ingestion of a foreign body into the digestive canal with subsequent violation of the passage of food is an emergency [1]. Despite a long history, the problem of treating patients with foreign bodies of the esophagus (FBE) remains relevant. This is associated with both an increase in the number of admissions and the severity of complications of foreign bodies of this location. FBE can be safely removed during rigid esophagoscopy, thereby avoiding open surgical interventions, which may be required in the presence of complications (perforation, bleeding or abscess) [2]. The experience of many years of using fibroscopy proved the high efficiency of this method in the diagnosis and treatment of such patients [3]. However, in some cases, attempts of endoscopic removal of foreign bodies are not always successful; often, there is a need for surgical interventions [4–6]. Despite lots of suggested surgical methods for treating esophageal injuries, their results remain disappointing, and mortality among patients with this pathology reaches 50% [7–9]. In this regard, many issues of diagnosis, management tactics and treatment of this category of patients remain controversial and require solution [6].

Taking into the account all of the above, we considered it necessary to provide a description of the clinical case: an unusual FBE of the esophagus (a pack with psychoactive substances).

A 34-year-old male patient T. was admitted on September 29, 2018, 3 hours after the onset of the disease with complaints of the absence of passage of solid and liquid food through the esophagus. These complaints arose after eating (soup and meat).

The general condition of the patient upon admission was of moderate severity. The skin and visible mucous membranes were clean, normal in color. Peripheral lymph nodes were not palpable. In the lungs, vesicular breathing, wheezing was not heard, heart sounds were clear, rhythmic, blood pressure 120/80 mm Hg. Pulse 72/minute. The abdomen was soft, painless. There were no symptoms of peritoneal irritation. The liver was at the edge of the costal arch, the spleen was not palpable. Kidney punch was negative on both sides. Fibroesophagoscopy (FES) showed that the esophagus was freely passable to the lower third. The mucosa was pale pink. In the lower third (35–36 cm from the tooth line), the lumen of the esophagus was completely obstructed by a foreign body (a piece of meat). It was not possible to remove the foreign body or push it into the stomach. There was an attempt to promote a foreign body under anesthesia using esophagoscopy but we failed. X-ray of the esophagus was performed with contrast: the esophagus in the upper and middle third was expanded to 3.2x3.3 cm. At the level of Th8–Th9, the filling defect of the entire diameter of the esophagus with traces of barium in the lower third of the esophagus was revealed. An X-ray examination of the chest organs (CO): normal mediastinum, structural roots of the lungs. Lungs were expanded and clean. Diaphragmal domes were clear, sinuses were free. The patient was examined by a cardiologist, while no cardiac pathology was detected. The patient was placed under observation in the intensive care unit. It was decided to perform computed tomography (CT) scan of chest organs, according to which (in Fig. 1) a foreign body with dimensions 53x24x20 mm was determined in the lumen of the esophagus at the level of the vertebral bodies Th7–Th9 (55 mm above the diaphragm). Data for damage to the esophagus and leakage of contrast were not found.



Fig. 1. Chest CT upon admission



After CT, the patient began to notice deterioration such as hypersalivation, the appearance of shortness of breath. On examination, massive subcutaneous emphysema of the neck and chest was noteworthy. In connection with a suspicion of a rupture of the esophagus, it was decided to perform emergency surgery. The middle third of the esophagus was mobilized. In the middle third of the esophagus, a foreign body of soft elastic consistency was found. Mechanically, the foreign body was pushed down to the stomach without opening the lumen of the esophagus. There were air bubbles in the posterior and anterior mediastinum. Free fluid in the pleural cavity was not detected. Bubbles were dissected. The operating team invited endoscopist. The control FES was completed. Endoscopic insufflation of air. No esophageal defects were found. Check for foreign bodies. Hemostasis. Check for aerostasis — tight. The pleural cavity was drained by two Bulau drainages. The postoperative thoracotomy wound was sutured in layers tightly. Aseptic dressing.

For 10 days, the patient underwent intensive measures in the intensive care unit, including antibacterial, anti-inflammatory, and detoxification therapy. Despite the therapy, the patient's condition remained serious. He had been in coma for 10 days, hectic fever developed on the 7th day of the postoperative period. Increased transaminases, α -amylase, lactate dehydrogenase, C-reactive protein in the biochemical analysis of blood, increased presepsin blood up to 3 norms. A CT scan of the brain was performed (no data confirming the focal pathology of the brain at the time of the examination), CT scan (Fig. 2) of CO (bilateral hydrothorax, right-sided lower lobe pleuropneumonia. No CT findings of mediastinitis, esophageal rupture at the time of examination were identified. By the decision of the doctors' council, repeated surgical treatment was recommended, taking into account hectic fever, signs of a systemic inflammatory reaction, and suspected mediastinitis.



Fig. 2. Images of chest CT after the first operation

On the 9th day of post-operative period we performed left repeated thoracotomy, revision of mediastinum, esophagus, Bulau draining the left and right pleural cavity. During the revision of the mediastinum, pathological leaks or signs of mediastinitis were not detected. No defects of the esophagus were found.

There was also a diagnostic search for meningoencephalitis. A lumbar puncture was performed with the study of cerebrospinal fluid, and meningoencephalitis was not confirmed. Further, given the patient's prolonged coma, it was decided to conduct a diagnostic search for narcotic drugs in the urine. A narcologist was invited. In the analysis of urine for psychoactive substances (surface active substances), tetrahydrocannabinolic acid, aminochlorobenzophenone (ACB) (a derivative of 1,4-benzodiazepine) were identified and the diagnosis was set: "Addiction syndrome caused by the use of several surface active substances".

On the 9th day after the second operation, the patient was conscious and inhibited. Upon a targeted clarification of the narcological history, the patient confirmed the fact of swallowing a packet with a surface active substances.

During the treatment, the patient's condition improved. Postoperative wounds healed by first intention. All stitches were removed. Drainages were removed. The esophagus was passed freely according to FES. Free fluid in the abdominal cavity was not detected. The lungs were expanded according to X-ray of the CO. On the 14th day after the second operation, the patient was transferred to the regional narcological hospital. Upon the transfer, the body temperature was within normal limits, the condition was satisfactory.

Four months later, the patient's condition was satisfactory, he ate naturally. According to FES, the esophagus was freely passable.

DISCUSSION

The described clinical observation indicates the complexity and versatility of approaches to the management of patients with such a problem as FBE [7, 8]. There is always a certain risk of esophageal perforation in this pathology [3]. In most cases, FBE can be extracted using an esophagofibroscope [2, 3], however, if it is impossible, thoracic surgeons should be ready to help. The uniqueness of this clinical case is that FBE was a package with a surface active substance, which, unfortunately, was not diagnosed upon admission, which led to incorrect surgical tactics (mechanical reduction of a foreign body into the stomach without opening the lumen of the esophagus), severe postoperative course (consciousness at the coma level for 10 days) as a result of absorption in the gastrointestinal tract of a large amount of surface active substance. In the postoperative period, during the further diagnostic search, the true nature of the foreign body was established, tetrahydrocannabinolic acid, and ACB (a derivative of 1,4-benzodiazepine), which are surface active substance, were determined in the analysis of urine. Intensive complex postoperative therapy contributed to a favorable outcome.

CONCLUSION

In patients with a foreign body of the esophagus in difficult clinical situations, it is necessary to collect anamnesis carefully, apply endoscopic, radiological and laboratory diagnostic methods, including urinalysis for psychoactive substances.

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