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ESOPHAGEAL DYSPHAGIA: CLINICAL PICTURE, DIAGNOSIS, TREATMENT. LITERATURE REVIEW

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Abstract. Dysphagia (difficulty swallowing) is a violation of the normal passage of swallowed food at the beginning of swallowing or when passing through the esophagus. There are oropharyngeal and esophageal types of dysphagia. Dysphagia or malnutrition is always associated with a high risk of medical complications, being a predictor of poor functional recovery and increasing the risk of sudden death. Esophageal dysphagia can be caused by various diseases, anatomical abnormalities of the digestive tract, and neuromuscular disorders. The review presents the clinical manifestations, diagnosis and treatment of esophageal dysphagia.

Key words*: esophageal dysphagia; diagnosis of dysphagia; treatment of dysphagia.*

ПИЩЕВОДНАЯ ДИСФАГИЯ: КЛИНИКА, ДИАГНОСТИКА, ЛЕЧЕНИЕ. ОБЗОР ЛИТЕРАТУРЫ

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Резюме. Дисфагия (затруднение глотания) — это нарушение нормального прохождения проглатываемой пищи в начале глотания или при прохождении по пищеводу. Выделяют орофарингеальную и пищеводную виды дисфагий. Дисфагия или недостаточность питания всегда ассоциируются с высоким риском медицинских осложнений, являясь предиктором плохого функционального восстановления и увеличивая риск внезапной смерти. Пищеводная дисфагия может быть вызвана различными заболеваниями, анатомическими аномалиями отделов пищеварительного тракта, нервно-мышечными расстройствами. В обзоре представлены клинические проявления, диагностика и лечение пищеводной дисфагии.

Ключевые слова: *пищеводная дисфагия; диагностика дисфагии; лечение дисфагии.*

INTRODUCTION

Dysphagia (difficult swallowing) is a disturbance of the normal flow of food at the beginning of swallowing or when passing through the esophagus. Dysphagia is a common complaint, the frequency of which varies between adults and children, as they have a different disease spectrum. According to some data, the incidence of dysphagia in case of emergency may reach more than 30% of cases [1].

Dysphagia is a life-threatening disorder, as patients with dysphagia are at increased risk of

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malnutrition and withdrawal, cachexia, aspiration pneumonia, and obstruction of the respiratory tract [2–5]. Dysphagia is also associated with increased risk of death, poor quality of life, increased disability and longer hospital stays [3, 6, 7]. Dysphagia of any degree affects the nutritional status of the patient and is the most important cause of progression of protein-energy deficiency (PED) in children with infantile cerebral palsy (ICP) [4, 8, 9]. Dysphagia also significantly worsens the prognosis and complicates the rehabilitation of the patient [3].

Dysphagia is increasingly found in paediatric practices, especially as advances in health improve the survival of extremely premature children and children with complex congenital abnormalities [10]. Infancy and childhood are times of physical growth and cognitive development. In order for children to develop fully, they must be able to consume sufficient energy and nutrients safely and securely. Difficulty swallowing (dysphagia) in children can have a detrimental effect on food consumption and thus on growth and development [11]. Infants and children with nutritional difficulties are at high risk of aspiration, which can lead to recurrent aspiration pneumonia and chronic respiratory diseases [12]. As a result, it is essential to accurately identify and properly treat dysphagia in the paediatric population [11].

Prevailing global trends in the study of dysphagia and growing public awareness of the quality of life and its far-reaching implications for health suggest that research on dysphagia will gain further popularity [13]. Registers of patients suffering from dysphagia as well as gastronomic children with possible causes of gastrostomy are being established [14, 15].

MATERIALS AND METHODS

Using PubMed and elibrary bases using the keywords "esophageal, dysphagia, esophageal, dysphagia" found 2196 sources. The analysis selected 53 sources for review.

DEFINITION

The term "dysphagia" is commonly used to describe the subjective sensation of having difficulty swallowing during a bolus going from the mouth to the stomach or feeling obstruction when swallowing [16]. In clinical practice, it is more accurately described as the feeling of food or fluid stuck in the esophagus or thorax [17]. Dysphagia is seen as an obstruction in a person's initial swallowing (usually defined as rotoglobulic dysphagia) or a sense of an obstruction of food or fluid from the oral cavity to the stomach (usually defined as esophageal dysphagia) [18]. Esophageal dysphagia is called the lower, because the unpleasant sensations and their causes are related mainly to the lower part of the esophagus [1].

AETIOLOGY

Dysphagia (abnormal swallowing) can be the result of a wide range of diseases and disorders [2, 5]. Dysphagia is the most characteristic symptom lesion of esophageal [23].

There are several major states that are most common to esophageal dysphagia [1]: obturation of the esophagus lumen by the foreign body (often causes acute dysphagia) [24, 25]; lesion of the mucosa, which leads to narrowing of the lumen due to inflammation, fibrosis or neoplasia [26]:

- gastroesophageal reflux disease (esophageal peptic stricture) [1, 18, 24, 25];
- sidereal dysphagia or Plummer-Vinson syndrome (esophageal rings and connecting membranes) [22];
  - esophageal tumors, chemical lesions (ingestion of caustic fluids, medicinal esophagitis, sclerotherapy of esophageal varicose veins) [1, 2, 18];
  - radiation injuries, infectious esophagitis;
- mediastinum diseases that cause esophageal obstruction by direct invasion or by increasing lymph nodes [22]:
  - tumors (including lung cancer, lymphoma) [26];
  - infections (including tuberculosis, histoplasmosis);
  - cardiovascular diseases (atrial dilation, aortic aneurysm) [22];
- neuromuscular diseases affecting the smooth muscles of the esophagus and the submucosal nervous plexus disrupting the peristaltic thoracic region of the esophagus or lower esophageal sphincter (LES) or both [1, 27, 28]:
  - cardia achalasia [1, 29];
  - scleroderma [22];
  - other motor disorders (esophagospasm, cardiospasm);
  - esophageal diverticular [22];
  - post-surgical condition (fundoplication and other anti-defects) [1].

Problems with salivation, swallowing and feeding are observed in premature children, children with perinatal brain damage, after ischemic stroke and intraventricular bleeding [6, 30], patients with

cerebral palsy, in children with soft and hard palate crevices, laryngomalacia, patient with tracheostomy cannula, after prolonged intubation. Dysphagia in children is more common among patients with cerebral palsy [4, 14]. According to some authors, up to 46% of cases of dysphagia in children are patients with cerebral palsy [14, 22]. Difficulties in eating and drinking are also recognized sources of ill health in people with dementia [7].

Pronounced symptoms of dysphagia are characteristic of patients with eosinophilic esophagitis, which is becoming increasingly common [22, 27, 29, 31]. The incidence of dysphagia when eating solid consistency in such patients is 29–100% [32].

Esophageal dysfunction caused by opioids is becoming increasingly common [27].

Functional dysphagia (FD) is the most rare disorder (less than 1%) [18].

Refractory psychogenic dysphagia as functional laryngeal-pharyngeal disorder [33] has been increasing over the past few years.

Dysphagia should not be confused with the feeling of a "lump in the throat", which is not related to the act of swallowing and food flow disturbance [34, 35].

EPIDEMIOLOGY

Based on limited data, the prevalence of dysphagia in the general population is estimated at around 20 per cent and is estimated to be 50 to 66 per cent of people over 60 years of age. Dysphagia is more common in women than in men in all age groups. Elderly, stroke patients with a history, Alzheimer's disease or lateral amyotrophic sclerosis are more likely to complain about dysphagia. In younger people, dysphagia is often associated with a major systemic disease such as autoimmune diseases, gastroesophageal reflux disease (GERD) or eosinophilic esophagitis [36].

The incidence of dysphagia in the provision of emergency medical care reaches 33%, and the analysis of data on home care shows that 30-40% of patients have abnormalities of swallowing, which lead to a large number of aspiration complications [18].

Esophageal dysphagia is less common, 15–20% of cases [37].

CLINICAL PICTURE

Clinical signs of abnormality in the esophageal phase of swallowing: the sensation of "sticking" food behind the breasts, regurgitation [38].

Esophageal dysphagia may be accompanied by salivation, but not as pronounced as in oropharyngeal dysphagia. It is typical of hoarse-elk and voice-age, especially after sleep. Patients may complain about the sensation of a "lump in the throat", the feeling of a lump of food in the throat or esophagus, heartburn and burping, pain in the upper abdomen and behind the sternum. The chest pains may be quite severe and tend to increase. The appearance of a severe reflex cough is a consequence of the throwing of food masses into the larynx and trachea. As a rule, patients are forced to drink any food [37]. Some esophageal dysphagia patients, caused by cardia achalasia, may complain of difficulty swallowing in the cervical portion of the esophagus, which mimics oropharyngeal dysphagia. Esophageal dysphagia occurs equally after ingestion of both solid and liquid foods, often leading to suspicions of motor esophageal disorders. This suspicion is heightened when intermittent dysphagia is accompanied by chest pains in both solid and liquid foods [22].

Patients also suffer loss of body weight, nutritional status change [3, 9].

In children with gastroesophageal reflux disease, dysphagia is more common intermittently and occurs in the early stages of the disease, usually due to hypermotor esophageal dyskinesia [2].

Appearance of persistent dysphagia with simultaneous reduction of heartburn may indicate formation of esophageal stricture [39].

DIAGNOSIS

Diagnosis of dysphagia — multi-stage process [40]. Examination of a patient with dysphagia requires structured assessment to identify functional, neurological, inflammatory and malignant causes [36, 41].

Diagnosis of swallowing disorders is multifaceted and includes anamnestic method, methods of clinical examination (neurological examination of soft palate in rest and background, determination of palate or throat reflexes, swallowing test) as well as tools [20, 41].

Collecting a clinical history helps determine the type of dysphagia and can guide diagnostic testing. Important questions to ask patients with a disorder include specific features of dysphagia, its onset and progression, associated problems and eating habits taken to alleviate symptoms [28].

It is advisable to test the ingestion act and the off-road consistency of various foods together with a swallowing specialist or clinical speech therapist. It is necessary to pay attention to the fear of a sip in the patient, the leak of food, liquids and

saliva, unusual position when swallowing. If there is productive contact with the patient it is possible to identify complaints of pain when swallowing and refusal of certain dishes and drinks [22].

Assessment of the patient's ability to swallow is necessary at any stage of the patient's follow-up, especially for those showing signs of dysphagia, in order to prevent more serious complications such as aspiration and the risk of death [42].

Patients with esophageal dysphagia should be referred to upper esophageal endoscopy, as this test will help eliminate mechanical obstruction or inflammation, or provide evidence that it may be esophageal dysfunction. In fact, almost every algorithm aimed at treating esophageal symptoms begins with an endoscopy of the upper esophagus, as this will determine the curable etiology and eliminate malignant neoplasm [10, 17, 27, 29, 43].

Endoscopic examination allows detailed examination of mucous membrane condition, esophageal permeability, the presence of fistula, diverticulum, etc. The undeniable advantage of endoscopic examination is its functionalities to simultaneously use additional diagnostic and therapeutic capabilities [40, 44]. Endoscopy serves as a test of choice in case of suspicion of obstruction or gastroesophageal reflux disease, since biopsy can confirm the presence of esophagitis and provide specific pathological identification of obstructive lesion [28].

Contrast X-ray examination of the esophagus with barium [17, 20, 22, 27] may also be required for differential diagnosis. X-ray examination with contrast is available, safe and informative enough, and the combination of fluoroscopy and roentgenography reveals not only morphological but also functional changes [40]. X-ray examination of esophagus is additionally carried out for differential diagnosis of GERD with other organic lesions of esophagus, for diagnosis of complications of GERD, such as esophageal stricture and esophageal tumor, for detection of secondary disorders of esophageal motor function [18]. X-rays examinations can be used to assess esophagus for structural abnormalities (e.g., membranes, diverticula, strictures, neoplasms) and to assess function (e.g., swallowing mechanism and esophageal motor). A thorough X-ray assessment with an individual approach can help to avoid misdiagnosis [16, 43].

If, after an X-ray and endoscopic examination, an obvious source of dysphagia is not identified, the possibility of manometry to detect possible motor dysfunction should be considered [22, 28, 43, 45]. Highresolution manometry (highresolution manometry — HRM) is a state-of-the-art high-tech esophageal motor function research method. HRM is used to diagnose most esophageal diseases in which there are functional motor disorders. The examination is mandatory for patients who complain about dysphagia, in order to identify motor impairments of the LES and throat [17, 46]. When carrying out esophageal manometry in patients with dysphagia, chest pain may detect other (except achalasia) disorders of the esophagus peristaltic, accompanied by premature contractions or hypercontraction's, such as hypercontractile esophagus and distal esophagospasm [47]. It is also possible to define fragmented, ineffective peristalsis or its absence as possible causes of dysphagia symptom formation [48].

To exclude eosinophilic esophagitis, the esophageal mucosal bioptat is studied [49]. A daily pH-metre of the esophagus is performed if the patient complains of heartburn and the GERD [18] must be deleted.

TREATMENT

Proper treatment depends on the cause of dysphagia [10].

In older children with classic GERD symptoms, an empirical prescription of proton pump inhibitors (PPI) within 4-8 weeks is warranted. PPI play a key role in the treatment of GERD, but have not been found useful in infants with GER [50].

Patients with eosinophilic esophagitis are shown local steroid therapy [17].

Endoscopic methods of esophageal and esophageal anastomosis recovery are effective and safe and have a low frequency of complications [51].

The main trend today is the use of minimally invasive endoscopic methods. Thus, in the presence of esophageal strictures and anastomoses, various types of explosions, balloon dilation, electric dissection, stenting and operative treatment are used [40].

Esophageal endoprosthesis in case of stenosis or compression from outside is a low-traumatic, safe and effective intervention. Endoprosthesis by self-healing stents ensures a sufficiently wide clearance of the digestive tube, nutritional nutrition, as a rule, does not require repeated therapeutic interventions, thus improving the quality of life of this category of patients [52].

Rehabilitation is shown for all patients with dysphagia in CNS diseases. Patients require supervision and multidisciplinary team treatment and rehabilitation, including nutritional support, physical training and physiotherapy, speech therapy, pain therapy, psychological correction [53].

The treatment of functional dysphagia includes an explanation of the disease, its transient nature and favorable prognosis, as well as the following recommendations: avoid provoking factors, eat upright, thoroughly chew food and drink it. Sometimes IPP, antidepressants [1] can be effective.

CONCLUSION

Esophageal dysphagia is a common pathology in the practice of doctors of various specialties. Dysphagia has an extremely negative impact on the quality of life, leads to severe complications of the respiratory system, causes dehydration, energy metabolism disorders, cachexia and aggravation of disability. It significantly worsens the prognosis and complicates the rehabilitation of the patient. It should be borne in mind that dysphagia or malnutrition are always associated with a high risk of medical complications, being a predictor of poor functional recovery and increasing the risk of sudden death. Dysphagia can be caused by many diseases, anatomical abnormalities in the digestive tract, and neuromuscular disorders. In diagnosis, the most common methods, in addition to the interpretation of symptoms, medical history and physical assessment, are endoscopy, barium X-ray and esophageal manometry. Treatment approaches depend on the etiological cause of esophageal dysphagia and include both conservative and operative methods.

ADDITIONAL INFORMATION

Author contribution. Thereby, all authors made a substantial contribution to the conception of the study, acquisition, analysis, interpretation of data for the work, drafting and revising the article, final approval of the version to be published and agree to be accountable for all aspects of the study.

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