2021;18(3):132–136 Проблемы здоровья и экологии/Health and Ecology Issues

УДК 616.321-008.17-053.2-06:616.329-002-08
DOI: https://doi.org/10.51523/2708-6011.2021-18-3-16

Dysphagia in children: a clinical case of eosinophilic esophagitis

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ABSTRACT
The article is devoted to an urgent problem of gastroenterology — eosinophilic esophagitis (EoE) in children. This problem has not been sufficiently studied and requires further research and observation of clinicians. This article will be of interest to gastroenterologists, allergists, pediatricians, general practitioners, rehabilitation therapists, endoscopists, and pathomorphologists. The paper presents a description of a clinical case of EoE, the diagnosis of which was carried out only at the stage of complications, such as food penetration into the esophagus.

Keywords: *clinical case, eosinophilic esophagitis, penetration of food into the esophagus, dysphagia, children.*
Author contributions. Chachankova E.V.: concept and design of the study, publications reviewing on the subject of the article, collection of material and design of the article. Savanovich I.I. editing, discussing data, critical content checking, approval of the manuscript for publication.
Conflict of interests. The authors declare no conflict of interest.
Funding. The study was conducted without sponsorship.
For citation: Chachankova EV, Savanovich II. Dysphagia in children: a clinical case of eosinophilic esophagitis. *Health and Ecology Issues.* 2021;18(3):132–136. (In Russ.). DOI: https://doi.org/10.51523/2708-6011.2021-18-3-16

Дисфагия у детей: клинический случай эозинофильного эзофагита

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РЕЗЮМЕ
Статья посвящена актуальной проблеме детской гастроэнтерологии — эозинофильному эзофагиту (ЭоЭ) у детей. Данная проблема недостаточно изучена и требует дальнейших исследований и наблюдений врачей-клиницистов. Эта статья представляет интерес для гастроэнтерологов, аллергологов, педиатров, врачей общей практики, реабилитологов, эндоскопистов и патоморфологов. В работе представлено описание клинического случая ЭоЭ, диагностика которого была осуществлена лишь на этапе осложнений, таких как вклинение пищи в пищевод.

Ключевые слова: *клинический случай, эозинофильный эзофагит, вклинение пищи в пищевод, дисфагия, дети.*
Вклад авторов. Чеченкова Е.В.: концепция и дизайн исследования, обзор публикаций по теме статьи, сбор материала и оформление статьи. Саванович И.И.: редактирование, обсуждение данных, проверка критически важного содержания, утверждение рукописи для публикации.
Конфликт интересов. Авторы заявляют об отсутствии конфликта интересов.
Источники финансирования. Исследование проведено без спонсорской поддержки.
Для цитирования: Чеченкова ЕВ, Саванович ИИ. Дисфагия у детей: клинический случай эозинофильного эзофагита. *Проблемы здоровья и экологии.* 2021;18(3):132–136. DOI: https://doi.org/10.51523/2708-6011.2021-18-3-16

Introduction

Among diseases of the esophagus both in Europe and the United States, EoE is the second most common after GERD [1, 2] and is the main cause of dysphagia and acute episodes of food penetration into the esophagus in children [3]. EoE is a chronic slowly progressive Th2-associated esophageal disease, the pathogenesis of which is based on the development of eosinophilic inflammation (more than 15 eosinophils in the field of vision at 400-fold magnification) in the esophageal mucosa and submucosal fibrosis. With the progression of subepithelial fibrosis, esophageal strictures are formed, which is clinically manifested by symptoms of severe dysphagia, ultimately leading to severe disabling conditions [4].

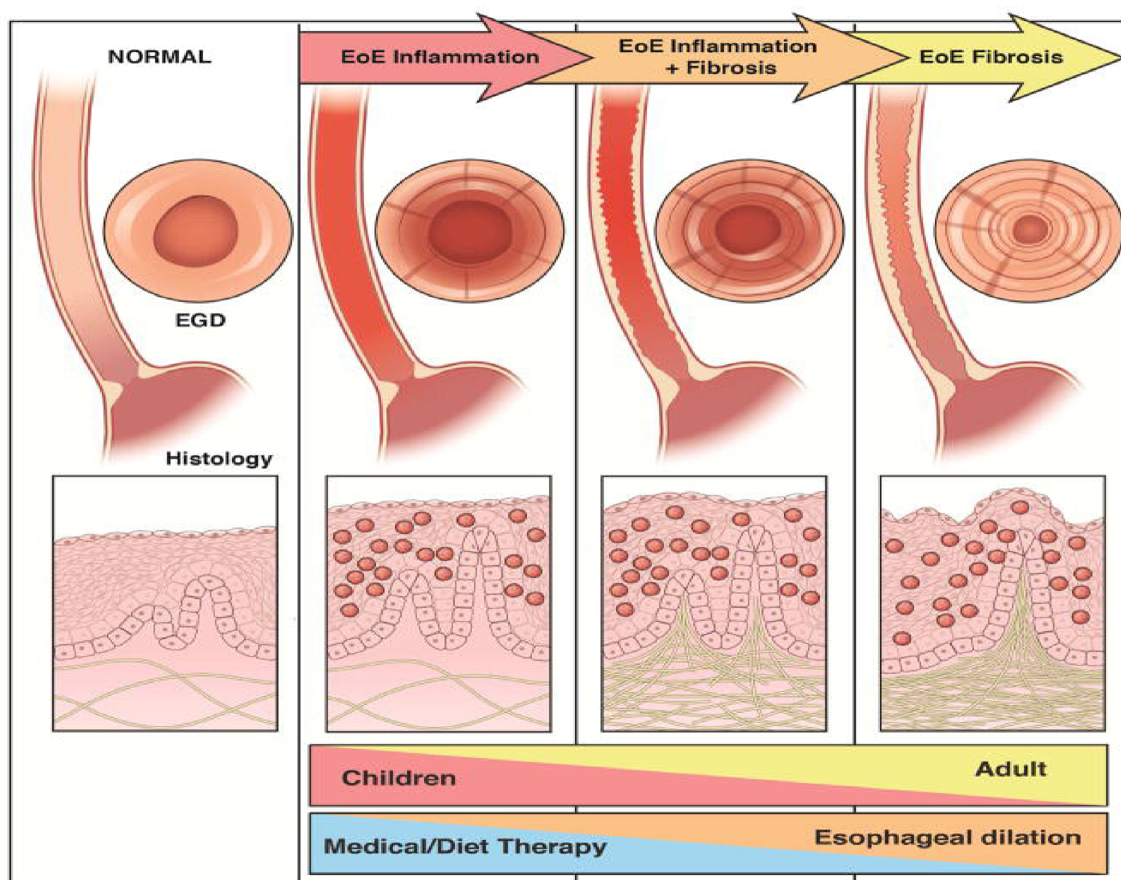

Figure 1. Description of the inflammatory process in the esophagus
Dellon ES, Hirano I. Epidemiology and Natural History of Eosinophilic Esophagitis. Gastroenterology. 2018 Jan;154(2):319-332.e3. [5]

The modern world is undergoing a continuous change in the structure of morbidity caused by technological progress, the emergence of genetically modified products, a deteriorating environmental situation, the development of the drug industry and other factors. Therefore, doctors and medical scientists increasingly face new rare and poorly studied nosologies [6].

Clinical case

Patient I., 17 years of age. He was admitted to hospital on an emergency basis with complaints of swallowing difficulty, a feeling of discomfort and a foreign body behind the breastbone. The life anamnesis revealed that about 2 days ago the patient had choked on meat. Diagnostic esophagogastroduodenoscopy (E HDS) was performed. Conclusion: a foreign body of the middle third of the esophagus (pieces of meat). Traumatic rupture of the esophageal mucosa. Acute erosions of the posterior wall of the duodenal bulb. A similar situation appeared 3 years ago, when the patient had choked on a fishbone. Since then, the phenomena of dysphagia were noted: choking when eating solid food (chicken in a soup), the need to swallow solid food with water (up to 0.5 cups for one swallowing), the feeling of a lump in the

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throat during meals, chest pain during meals, pain in the left hypochondrium; fear before eating solid food, poor weight gain. For several years, the patient instinctively consumed more liquid food in the diet — milk up to 2 liters per day.

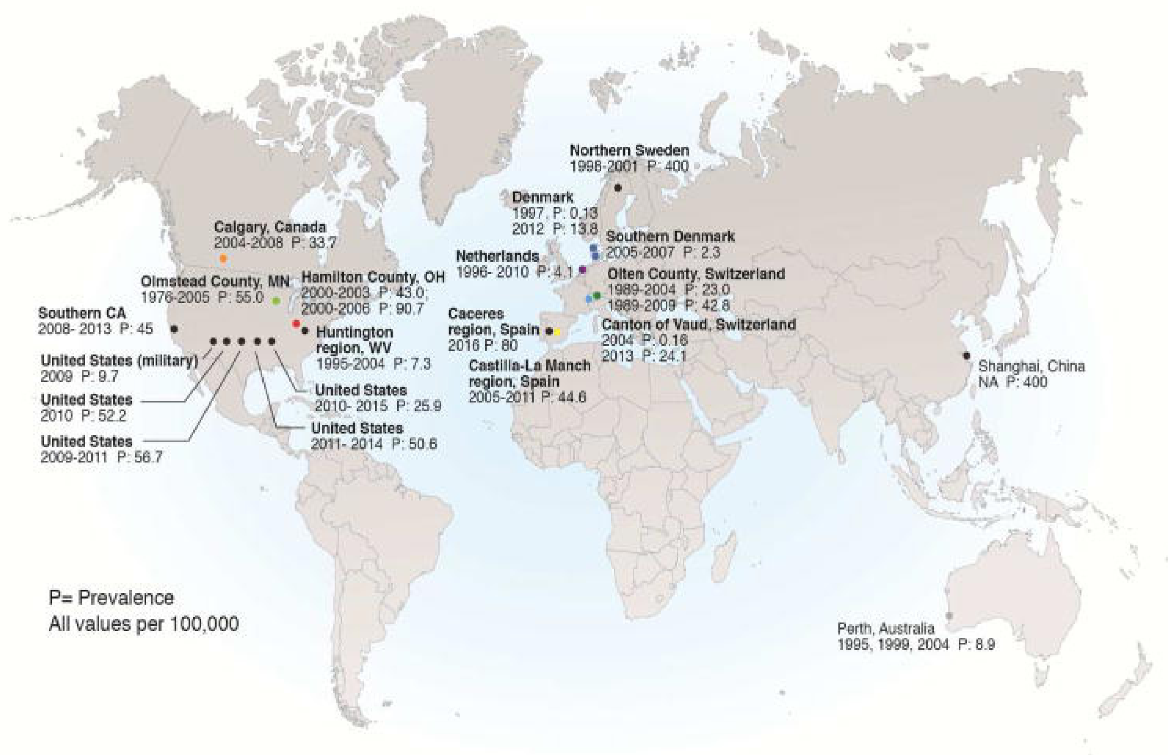

Figure 2. Worldwide prevalence of EoE
Dellon ES, Hirano I. Epidemiology and Natural History of Eosinophilic Esophagitis. Gastroenterology2018 Jan;154(2):319-332.e3. [5]

No bad habits. Heredity for allergic and oncological diseases is not burdened.

Objective status: a state of moderate severity. Asthenic physique, body mass deficit of the first degree. Organ systems: no pathology. There is multiple caries.

Laboratory tests

There were no abnormalities in the general laboratory tests. In particular, there was no eosinophilia in the general blood test. A high index of total immunoglobulin E was noted :7936.1 IU / ml (the norm is up to 25). There were phenomena of dysbiosis in the feces: lack of bifidobacteria and lactobacilli.

Control endoscopy with biopsy were carried out after 7 days. In the protocol , when describing the esophagus endoscopically, the thickness and longitudinal grooves of the mucous membrane of the middle and lower thirds of the esophagus were noted.

EGDS conclusion: EoE? Traumatic erosion of the esophagus in the epithelialization stage.

A biopsy of the mucous membrane of the middle and lower thirds of the esophagus was performed. The morphological conclusion: a fragment of the stratified squamous epithelium of the esophagus with intraepithelial eosinophils, degranulation of eosinophils (more than 15 in the field of view at high magnification), hyperplasia of the basal layer of the epithelium.

Clinical diagnosis

The main disease is EoE.

The concomitant disease is gastroesophageal reflux disease. Acute erosions of the posterior wall of the duodenal bulb (malnutrition 1 tbsp).

Treatment

The patient refused to undergo the treatment with topical corticosteroids (as recommended by the American and European Gastroenterological Associations [7, 8], the Russian Gastroenterological Association [9]) – it was necessary to apply a personalized approach to the patient's treatment [10]. The following appointments were completed:

• elimination diet with the exclusion of milk and limited consumption of eggs, wheat, soybeans and legumes, nuts, seafood.

• PPI (Pantoprazole 40 mg in the morning for 4 weeks, then 20 mg in the morning for 4 weeks).

• Control EGDS with "ladder" biopsy from the esophagus after 2 months to determine further tactics of the patient`s management.

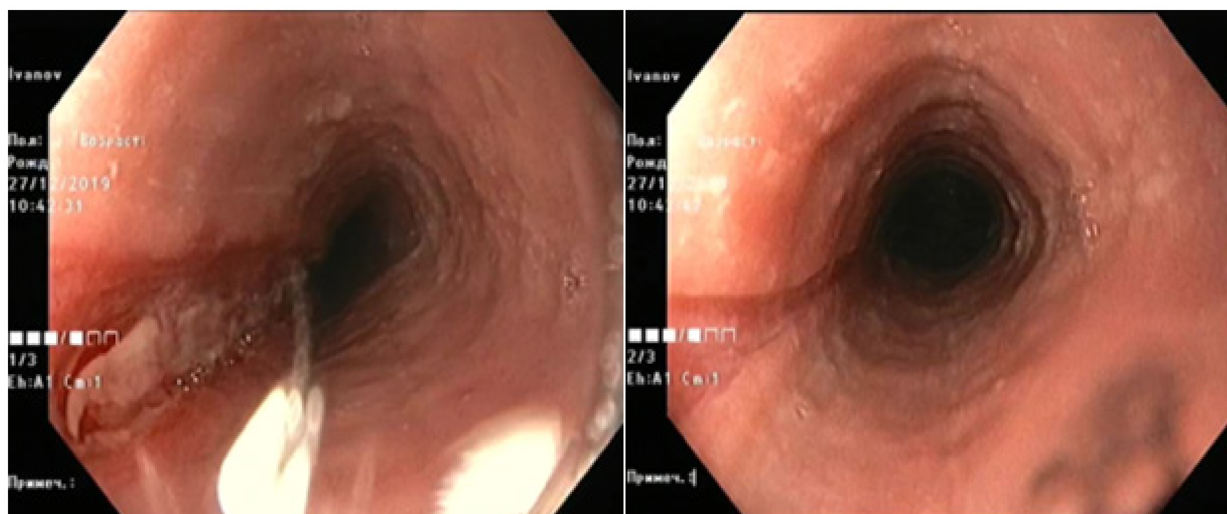

Figure 3. Endoscopic signs of EoE

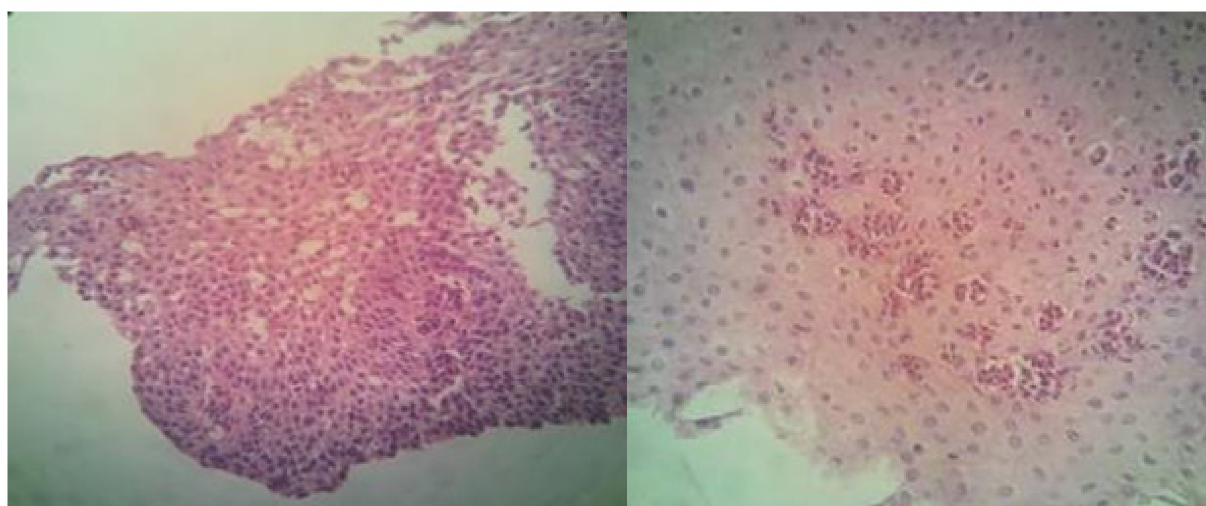

Figure 4. A fragment of the stratified squamous epithelium of the esophagus

Now what happened to the patient?

Undergoing the therapy, the patient noted the complete disappearance of the symptoms of dysphagia. However, the feeling of fear of eating meat in any form persisted. In this connection, he gave up meat. He kept drinking up to 2 liters of milk a day (the main diet was milk with bread products).

After building a partnership with the patient and his family to ensure compliance, the patient was provided with psychological care, the family were given convincing evidence about the necessity to follow an appropriate diet. The teenager gave up milk. He began to eat meat in the form of cutlets and meatballs, diversified the diet with vegetables and fruits. The fear of eating disappeared. He gained 2 kg within 3 months. The state of health and mood improved. It is planned to conduct further dynamic monitoring of the patient.

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Received / Поступила в редакцию 21.04.2021
Revised / Поступила после рецензирования 23.08.2021
Accepted / Принята к публикации 20.09.2021