I propose to analyze together Wood et al’s article "Treating children with achalasia using per-oral endoscopic myotomy (POEM): Twenty-one casts in review", recently published in the Journal of Pediatric Surgery [1]. The authors operated on 21 children from 2 to 18 years old for achalasia. The diagnosis of achalasia was suggested based on a combination of the following symptoms: chest pain, regurgitation, dysphagia, and weight loss. Barium esophagram was not always produced and only to exclude the sigmoid esophagus. Upper endoscopy was produced in order to exclude mechanical obstruction and inflammation. The diagnosis of achalasia was confirmed by a manometric study [1].

1. Introduction. First, the combination of clinical symptoms fully coincides with the symptoms of GERD.

Secondly, an X-ray examination, which would allow determining the rate of evacuation of barium from the esophagus to the stomach, the width of the esophagus, the length of the lower esophageal sphincter (LES), the motility of the esophagus and the function of the phrenic ampulla, was not performed. The x-ray study, which was carried out by the authors of the article, made no sense since in the literature there is not a description of the sigmoid esophagus in children without mechanical obstruction.

Thirdly, upper endoscopy without histological examination does not have diagnostic value. It only allows excluding the mechanical narrowing of the esophagus.

Thus, the diagnosis of achalasia was established solely based on a manometric study. However, a manometric study is not a diagnostic method, since it has no pathophysiological justification.
a) Obviously, all these cases are not related to idiopathic achalasia, since idiopathic achalasia does not occur in children.

b) Having experience in the diagnosis and treatment of patients with pathology of the esophagus and esophagogastric junction (EGJ) for about 50 years, I am sure, that pediatricians diagnosed GERD in such children, before the appearance of a manometric determination of achalasia.

c) The idea that manometry is self-sufficient, and modern science does not need outdated knowledge of the physiology of the digestive tract, has already played a role in the manometric study of anorectum in patients with functional constipation (FC). It is known that attempts to defecate or inflate the balloon in the rectum lead to a relaxation of the anal canal, i.e. pressure in the anal canal decreases. With FC, under the same conditions, an increase in anal pressure occurs, which prevents bowel movement. This phenomenon had different names: achalasia of the internal anal sphincter (IAS) [2], dyssynergic defecation, [3], obstructive defecation and paradoxical puborectalis contraction [4]. For many years, internal anal sphincter myectomy has been used to treat FC. Currently, this procedure is not even considered an option for the treatment of FC, because it turned out that a temporary improvement in bowel movements is replaced by constant fecal incontinence.

From the point of view of physiology, anorectum becomes clear that in patients with FC, a normal reaction of the IAS is determined. Normally, the defecation reflex is excited at a certain threshold pressure in the rectum. If the rectal pressure is less than this level, the inhibitory rectoanal reflex is triggered: relaxation of IAS and contraction of the puborectalis muscle and external anal sphincter [5]. With FC, there is always an expansion of the rectum. In order to create a defecation threshold pressure in megarectum, a larger volume of the balloon (feces) is needed than normal. A smaller balloon causes an inhibitory reaction [6]. Thus, IAS am not guilty, and its intersection was not justified.
We see a complete analogy between anorectum in patients with FC and EGJ in patients with GERD. The number of swallows that normally cause the opening of the LES, in patients with an extended esophagus is insufficient to open the LES. Thus, not achalasia, but GERD "... is a motility disorder of the esophagus characterized by lack of the peristalsis of the esophageal body and inadequate relaxation of the lower esophageal sphincter, leading to symptoms of dysphagia, regurgitation, chest pain, and weight loss" [1,7]. If there is no correlation between the manometric signs of achalasia and other research methods [8], therefore, this diagnosis has no scientific justification. It appeared due to the lack of the proper effect of conservative treatment of GERD in some chronic patients, against the background of false ideas about the normal physiology of EGJ and pathological physiology of GERD, which were based on the initial error in the selection of the normal limit of pH-metry [7]. An analysis of the literature and our own observations indicate that patients with manometric signs of achalasia are patients with GERD as a result of damage to the function (decreased tone) of the LES.

The medical management with smooth muscle relaxing agents (such as calcium channel blockers, nitrates, and botulinum toxin injection) and, moreover, balloon dilation and POEM are not only pathogenetically unjustified but are contraindicated, as they worsen the already weak function of the LES. The fact that ROEM is performed for adult patients and started to be done in children does not justify the authors of this article.

II. Article Analysis.

The authors of the article describe 21 patients in whom, based on a manometric study, diagnosed achalasia. The basis for the manometric study were typical symptoms of GERD. Only 2 patients before POEM surgery were treated with Botox (1) and balloon dilatation (1). Thus, in each case, there was an acute disease with severe GERD symptoms that did not undergo a pH-metric and X-ray studies, and they did not receive PPI treatment, as recommended in primary care [9,10].
Even according to the apologist for the widespread use of the diagnosis of achalasia, Pandolfino et al “... many patients have symptoms for many years prior to correct diagnosis and treatment” [11]. Adult surgeon's research deals with chronic but not acute disease “with symptoms that mimic gastroesophageal reflux disease, such as heartburn, chest pain, and regurgitation” and they recommend producing a barium esophagogram [11]. Unfortunately, the authors of this article [11] did not use the generally accepted method of x-ray examination. Radiographs with a picture of complicated GERD were interpreted from the point of view of a manometric study. In other articles, of the Chicago research team, HRM accuracy is verified using a sophisticated interpretation of the same HRM.

After the primary POEM, in 16 (76%), a second procedure was performed to weaken the LES (13 patients required further dilation (s), one required laparoscopic Heller myotomy, and two required repeat POEM). In one case, a gastrostomy was performed.

The short-term success and only based on clinical symptoms cannot be considered convincing evidence of the expediency of POEM, because it is known that GERD can progress for a long time without clinical manifestations. Secondly, as shown in our study, dilation of the LES with a large tablet in most patients with GERD leads to the disappearance of symptoms [12]. Third, in the article of Sanaka et all the chart review of all achalasia patients who underwent POEM, laparoscopic Heller myotomy with Dor fundoplication or pneumatic dilation was performed. There was no difference in efficacy between the three modalities [13]. Of these methods, only POEM irreversibly damaged the LES without protective fundoplication.

If the authors declared the treatment of 21 patients since 2014, it is very strange that the long-term results are not shown, at least in those 10 patients, which were in their previous article [14].
Esophageal emptying assessed by a timed barium esophagram, which is a complementary test to HRM for functional assessment of esophageal physiology. Patients are instructed to drink the maximum volume of dilute barium sulfate contrast (45% weight in volume) that they can tolerate without regurgitation or aspiration (mostly between 100 and 250 mL) over a period of 30 to 45 s. With the patient in the upright position, radiographs of the esophagus are taken at 1 and 5 min after the last swallow. The height and width of the barium column are measured using a calibrated ruler. Estimated esophageal barium volume is calculated as a simple cylinder ($\pi r^2 \times$ height of barium column, $r =$ barium width divided by 2) [13]. The post-treatment improvement in esophageal emptying is a predictor of the need for retreatment in achalasia. Vaezi et al [15] have shown that successful esophageal emptying, defined as at least 50% reduction of barium column after treatment, was associated with long-term remission of symptoms.

Conclusion

The article describes 21 cases of the first acute disease with typical symptoms of GERD. The authors did not use the differential diagnostic methods accepted in science: the appointment of a PPI course, pH-metry, X-ray study. The diagnosis of achalasia was made based on HRM alone, which is not a diagnostic method. The supposedly good results of POEM were evaluated only in 10 patients 1 year after surgery, even though each of them suffered an average of 2.1 repeated interventions during this year. The remaining patients were lost for evaluation, as their parents did not have a telephone or access to the Internet. The authors of the article did not provide evidence of the reliability of the diagnosis of achalasia. All the data presented in the article indicate that the LES was dissected in children at the initial stage of GERD. The short-term results of treatment "... similar to that seen in the literature for adult ..." [1], should be assessed as very poor, since among adult patients there are always a number of patients with idiopathic
achalasia, and in other cases, they are chronic patients with a severe and complicated form of GERD.

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