

# Diseases of the esophagus

## Gastroesophageal reflux disease (GERD)

**Gastroesophageal reflux disease** is a disease caused by pathological gastroesophageal reflux. Its most common complication is damage to the esophageal mucosa (**reflux esophagitis**).

Gastroesophageal reflux (GER) is the penetration of gastric contents into the esophagus. Episodes of short-term GER are common. It becomes pathological if it causes difficulties and / or inflammatory changes in the esophageal mucosa.<sup>[1]</sup>

### Clinical picture

#### Esophageal symptomatology

- heartburn ("heartburn"; burning behind the sternum ranging from the epigastrium to the sternum, usually after a meal, in a horizontal position or in a forward bend)
- regurgitation (inflow of gastric contents into the esophagus and mouth);
- dysphagia (difficulty swallowing);
- odynophagia (pain behind the sternum when swallowing) - signs of severe esophageal damage;
- salivation;
- globe (foreign body sensation in the throat);
- chest pain

#### Extraesophageal symptomatology

- dry throat, ear pain, bad breath;
- hoarseness, laryngitis, recurrent lung infections;
- vagus irritation (bradycardia, bronchoconstriction).<sup>[2]</sup>

### Diagnosis

The gold standard is **endoscopic examination (esophagoscopy) with biopsy**, in which macroscopic and microscopic changes are examined. Other examinations include:

- **24-hour esophageal pHmetry**, or esophageal pHmetry, that is reliable in determining acidic or basic reflux and its relationship to the symptoms;
- **esophageal manometry** provides information about the pressure conditions in the lower esophageal sphincter, does not diagnose GERD, but is suitable for the exclusion of achalasia;
- **Esophageal X-ray (esophagogram)** is useful to exclude anatomical esophageal abnormalities (esophageal stenosis / stricture, hiatal hernia, achalasia), but is neither sensitive nor specific for the diagnosis of GERD;
- 99mTc-labeled **scintigraphy**;
- perfusion test;
- diagnostic therapeutic test (14 days of omeprazole, disappearance of symptoms confirms the diagnosis).

### Complications

Complications include esophageal stenosis, Barrett's esophagus (followed by adenocarcinoma) or esophageal ulcer.<sup>[1]</sup>

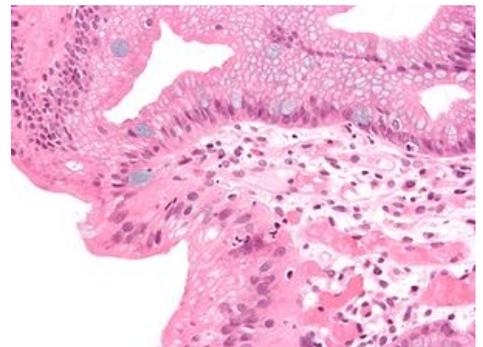
### Treatment

1. **regime measures** - weight reduction, restrictions on increasing intra-abdominal pressure, no smoking, dietary restrictions (non-irritating diet excluding alcohol, fatty foods, pastries, chocolate, coffee, peppermint; smaller portions; do not eat before going to bed);
2. **pharmacotherapy** - H2-blockers (ranitidine), proton pump inhibitors (omeprazole), prokinetics (metoclopramide, domperidone, itopride), antacids;
3. **surgical treatment** - fundoplication according to Nissen.<sup>[1]</sup>

## Corrosive esophagitis



Barrett's esophagus - endoskopische picture



Barrett's esophagus - mikroskopische picture

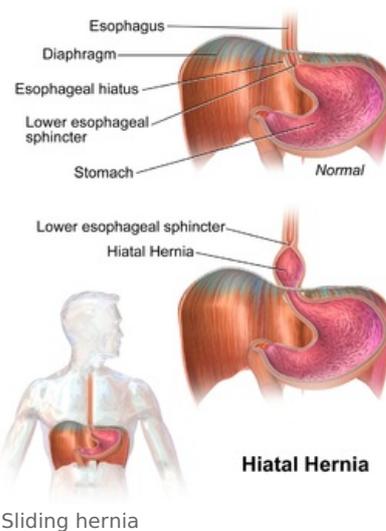
It is caused by **acid / lye burns** of the esophagus (mistake, suicide) or may be caused by medication (alendronate, used in the treatment of osteoporosis, causes localized burns when the tablet gets stuck). Corrosion is either **superficial** (dilute solution) or **deeper** (necrotic ulcers with a risk of perforation, which heal with a stricture scar). Neutralization (milk, etc.) has a therapeutic effect, in severe cases opiates, anti-shock therapy, ATB and endoscopic dilatation of stenosis is used as a treatment<sup>[1]</sup>.

## Hiatal hernias

This involves the transfer of the cardia and / or part of the stomach from the peritoneal cavity to the mediastinum by the esophageal hiatus. The gastroesophageal junction, gastric fundus or both enters the mediastinum. An extreme case is the dislocation of the entire stomach into the mediastinum (so-called upside-down stomach, where the cardia and pylorus remain in the abdominal cavity). The stomach (and other intra-abdominal organs) can dislocate into the mediastinum or pleural cavity even in severe injuries - these are false hernias (prolapse) whose opening is a traumatic rupture of the diaphragm.

### Types of hernia

1. **sliding hernia** (par glissement) - the most common, common in the elderly. This is a false hernia, the hernia sac is missing. Gastroesophageal junction enters the mediastinum, the main complication is the gastroesophageal reflux;
2. **paraesophageal hernia** - rare, more common is a mixed form. The gastric fundus passes into the mediastinum, the junction remains in the peritoneal cavity. The complication is chronic bleeding with the development of anemia to strangulation with necrosis of the wall and perforation, obstruction with a disorder of the passage and oppression of intrathoracic structures (heart, lungs). Pure paraesophageal hernia is usually present in a congenital defect hiatus communis - a common passage of the esophagus and aorta through the diaphragm;
3. **mixed hernia** - gastric fundus with gastroesophageal junction enters the mediastinum at the preserved Hiso angle.



### Symptoms and diagnosis

Difficulty swallowing, pressure behind the sternum, epigastric pain (strangulation), vomiting (passage disorders), heartburn in slippery or mixed hernia, chronic anemia caused by bleeding.

### Diagnosis

We use X-rays (swallowing a contrast agent - determines the type of hernia) and endoscopy (evidence of esophagitis - gastroesophageal reflux, otherwise indicated by pH-metry).

### Treatment

**Conservative treatment** consists of the administration of H2-blockers in gastroesophageal reflux. **Surgical treatment** includes gastric repositioning, resection or retention of the hernia sac, hernia opening closure (hiatorrhafie), fixation of the fundus to the diaphragm (fundopexy - can also be used to close the defect) and the anterior stomach wall to the abdominal wall (gastropexy), Nissen-Rossetti fundoplication is indicated for the gastroesophageal reflux<sup>[2]</sup>.

## Achalasia

Iron

It is a disorder of the motility of the lower esophageal sphincter, which does not relax when eating and the esophagus has non-peristaltic contractions. Achalasia is caused by a neuromuscular disorder (at the level of the vagus nerve or esophageal muscle), associated with loss of cells in the myenteric plexus and muscle hypertrophy. Increasing intraluminal pressure can lead to pulsed diverticles above the sphincters.

### Symptoms and diagnosis

- dysphagia
- chest pain
- regurgitation
- aspiration

### Diagnosis

An X-ray contrast passage and esophageal manometry are used for diagnosis. According to the X-ray findings, there are 4 stages:

1. motility disorders without esophageal dilatation, increased resting sphincter tone;
2. gradual dilatation of the esophagus, loss of peristalsis;
3. the esophagus sags, it becomes an atonic sac placed on the diaphragm;
4. dolichomegasophagus.

## Treatment

1. **conservative** – calcium channel blockers will alleviate the difficulties
2. **endoscopic** – botulinum toxin injection into the lower esophageal sphincter, balloon dilatation (method of choice)
3. **surgical** – Heller's myotomy of lower esophageal sphincter, resection and esophageal replacement when the myotomy fails<sup>[2]</sup>

## Diverticles

Iron

A diverticle is a protrusion of a hollow organ, it can be:

- **true** (consisting of all layers of the wall);
- **false** (mucous membranes and submucosa spreading through the muscle);
- **traction** (arising from external traction);
- **pulse** (caused by an increase in intraluminal pressure).

Examples of diverticles include:

1. **Zenker's diverticle** - pulsed true diverticle jutting between pars thyropharyngea and cricopharyngea musculus constrictor pharyngis inferior, occurs in upper esophageal achalasia, clinically upper dysphagia with regurgitation, foetor ex ore, arching on the neck when swallowing, possibility of aspiration of content which can lead to bronchopneumonia;
2. **parabronchial diverticle** - traction true diverticle in the area of bifurcation of the trachea - it is formed by pulling of the esophageal wall by the scarring inflammatory processes of the mediastinal nodes, it is usually not clinically manifested, until at large dimensions it can cause pressure problems ;
3. **epiphrenic diverticle** - pulse diverticle caused by achalasia (lower esophageal sphincter hypertension), clinical dysphagia.



Skiagram Achalasia

## Diagnosis

The X-ray passage of the contrast agent through the esophagus and manometry (achalasia assessment) is mainly used in diagnostics. Endoscopy is only an additional tool.

## Treatment

If diverticle is a problem, surgical treatment is the key. For larger diverticules, resection and suturing of the wall are performed, smaller ones can be left or submerged. It is important to treat the cause - in achalasia (esophageal manometry required - myotomy is performed in Zenker's diverticle with upper sphincter hypertension and in epiphrenic with lower esophageal sphincter hypertension). After the operation, ATB (the possibility of mediastinitis due to putrefactive processes taking place in the stagnant content of diverticle) should be given. Paresis of the laryngeal recurrence nerve may occur during Zenker's diverticulum surgery.<sup>[2]</sup>

## Links

### Related articles

- Gastroezofageal reflux (pediatry)
- Antacid

## References

1. KLENER, Pavel, et al. *Internal medicine*. 3. edition. Prague : Galén, 2006. s. 558. ISBN 80-7262-430-X.
2. PASTOR, Jan. *Langenbeck's medical web page* [online]. [cit. 03-22-2010]. <<https://www.freewebs.com/langenbeck/GE.doc>>.
3. KMENT, Milan. *Diseases of the esophagus* [ lecture on the subject Internal Medicine, General medicine, 3. faculty of medicine, Charles University]. Prague. 2016.

Kategorie:Vnitřní lékařství Kategorie:Gastroenterologie Kategorie:Patologie Kategorie:Otorhinolaryngologie

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- 2.