

# Reflux disease of the esophagus

**Reflux disease of the esophagus** 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 stomach contents into the esophagus. Episodes of short-term GER occur commonly. It becomes pathological when it causes discomfort and/or inflammatory changes in the esophageal mucosa<sup>[1]</sup>

## Pathological and anatomical picture

Due to the presence of HCl, desquamation of the squamous epithelium occurs. This induces **increased cell proliferation** in the basement membrane. Immature cells are **less resistant** to further exposure to refluxate and also to infections. Over time, cells begin to be missing and erosion to ulceration develops. In the case of deeper changes, the cylindrical epithelium overlaps - metaplasia, the so-called Barrett's esophagus (Barrett's ulcer - it arises in the area with cylindrical epithelium, it can bleed, sometimes perforation occurs).

## Classification

1. Endoscopically positive reflux disease of the esophagus,
2. Endoscopically negative reflux disease - clinical symptoms with negative endoscopy but positive biopsy,
3. Extraesophageal (larynx, pharynx, bronchi, middle ear).

The cause of reflux disease is a disorder of esophageal motility, in particular, insufficiency of the lower esophageal sphincter (the mechanism of transient relaxation of the lower sphincter, its hypotension or disruption of the gastroesophageal junction associated with hiatal herniation).<sup>[2]</sup>

## Clinical image

### Esophageal Symptomatology

- Pyrosis ("heartburn"; burning behind the sternum moving from the epigastrium to the manubrium of the sternum, most often after eating, in a horizontal position or in the prone position),
- regurgitation (flow of gastric contents into the oesophagus and mouth),
- dysphagia (difficulty swallowing), odynophagia (pain on swallowing behind the sternum) - signs of severe oesophageal involvement,
- paroxysmal salivation,
- globus (sensation of a foreign body in the throat),
- chest pain.

### Extraesophageal symptomatology

- Dry throat, pain in the ears, bad breath,
- hoarseness, laryngitis, recurrent lung infections,
- irritation of the larynx (bradycardia, bronchoconstriction).<sup>[2]</sup>

## Diagnosis

### Endoscopic examination (esophagoscopy) with biopsy

The gold standard in diagnostics. Endoscopic findings of reflux esophagitis have 4 grades according to Savary-Miller (grade 4 is metaplasia by cylindrical epithelium (Barrett's esophagus), microscopically esophagitis is mild, moderate or severe).

### 24-hour esophageal pHmetry

Or **esophageal pHmetry** is valid and reliable to determine acid or alkaline reflux, its temporal relationship with symptoms.

Description of the test: insertion of a thin probe through the nose into the esophagus; connection of the probe to a device that can record the pH in the esophagus; during 24 hours the patient performs normal activities, eats normal food, then the probe is removed and the record is evaluated.<sup>[3]</sup>

### Esophageal manometry

Provides information on pressure relationships in the lower esophageal sphincter; does not diagnose GER. Suitable to rule out achalasia.

Description of examination: a measuring probe is inserted through the nose into the oesophagus and then into the lower oesophageal sphincter; the course of the swallowing act is measured when swallowing "empty" and when swallowing 10 ml of water; performed fasting.<sup>[4]</sup>

### X-ray passage through the esophagus (esophagogram)

It is neither sensitive nor specific for the diagnosis of GER. Useful to exclude anatomical abnormalities of the upper gastrointestinal tract (malrotation, anomalous pancreas, esophageal stenosis/stricture, hiatal hernia, achalasia).

Other investigations performed: 99mTc dietary **scintigraphy**, perfusion test, diagnostic therapeutic test (14 days of omeprazole administration, disappearance of symptoms confirms the diagnosis).

## Differential diagnosis

AP, peptic ulcer, esophageal Ca.

## Complications

- Esophageal stenosis - fibrosis in the area of ulceration,
- Barrett's oesophagus with metaplasia (sometimes referred to as precancer),
- esophageal ulcer,<sup>[1]</sup>
- adenocarcinoma.

## Course of the disease

The course is chronic relapsing (relapses after treatment).<sup>[2]</sup>

## Treatment

1. Regimen measures - weight reduction, limiting the increase in intra-abdominal pressure, smoking ban, dietary restrictions (non-irritating diet with the exclusion of alcohol, fatty foods, sweet yeast pastries, chocolate, coffee, peppermint; smaller portions; not eating before going to bed),
2. pharmacotherapy - H2-blockers (*ranitidine*), proton pump inhibitors (*omeprazole*), prokinetics (*domperidone*, *itopride*), *antacids*,
3. surgical treatment - fundoplication according to Nissen.<sup>[1]</sup>

## Links

You can watch the osmosis video

### Related articles

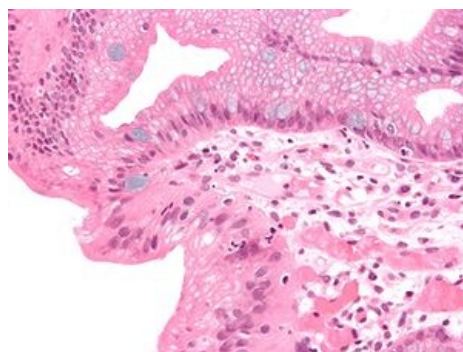
- Diseases of the esophagus
- Gastroesophageal reflux (pediatrics)
- Barrett's oesophagus

### Reference

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2. PASTOR, Jan. *Langenbeck's medical web page* [online]. [cit. 03-22-2010]. <<https://www.freewebs.com/langenbeck/GE.doc>>.
3. <http://www.nemcb.cz/cz/page/76/Vysetreni-hodinovou-phmetrii.html?detail=409>
4. <http://www.nemcb.cz/cz/page/76/Manometrie-jicnu.html?detail=408>



Barrett's esophagus - endoscopic image



Barrett's esophagus - microscopical image