

Extra-Esophageal Manifestation Of Gastroesophageal Reflux

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Abstract

The gastroesophageal reflux is a well-known disease that is not only correlated to esophageal symptoms. Besides of symptoms of pharynx and larynx patients complain of chronic cough, hoarseness, laryngitis, therapy resistant non-allergic obstructive airway diseases, dysphagia, globus sensations and thoracic and cardiac pain as well. In case of not being well-developed and out of context, these symptoms can be misleading and cause wrong therapeutical consequences, and it is the general practitioner's task to initialise and conduct differential diagnosis measures as to lead to a sufficient and specific therapy.

INTRODUCTION

The gastroesophageal reflux (GR) is often associated with symptoms of the upper and lower airways. These symptoms are found even in those patients, that do not complain the classical symptoms of GR and in which even no esophagitis is found. As the main symptoms of GR: water brash, epigastric abdominal pain, retrosternal pressure sensation, pain, ructus, queasiness, nausea, singultus even lead to a correct diagnosis without invasive measures, unspecific symptoms often conceal GR.

The following overview about differential diagnosis of the extra-esophageal symptoms of GR should lead the investigator to further diagnostic measures in case of obscure or therapy resistant symptoms.

ETIOLOGY OF GR

Even in the healthy there is a physiological spontaneous GR as well as GR after intake of fatty nutrition and aggressive stimulants. The increase of the intraabdominal pressure e.g. in pregnancy and in coughing, sneezing or during bending forward causes reflux of the stomach contents as well. The specific lock mechanisms and the esophageal peristaltic prevent the esophageal mucosa from a too intensive contact to sour materials, supported by the neutralizing and irrigating function of the lingual saliva. ¹

Patients with pathologic reflux have in average a lower closure pressure of the lower esophageal sphincter, higher frequencies of reflux and increased reflux duration. However, there is an overlap of physiological and pathological clinical

findings so as these pathomechanisms alone cannot be responsible for evaluation of disease symptoms.

Primary reflux disease. The etiology of the primary reflux disease is not well-known. In most cases patients with GR have a hiatus hernia, but this doesn't seem to be the main pathogenetic factor, as there are 80 % of patients with hiatus hernia that do not show any disturbances. Maybe the refluxesophagitis is caused by an increased sensibility of the mucosa against stomach fluid. Releasing mechanisms are the hydrochloric acid and the peptid enzymes of the stomach fluid as well.

Secondary reflux disease. Disturbances of the esophageal motility compromise the clearance function of this organ. They are caused by achalasia, diverticulosis, stenoses and strictures, diseases of the peripheral and central nerve system, diseases of the muscle and connective tissue, and carcinoma. Others are depletion disturbances of the stomach, increased intraabdominal pressure, postgastrectomy syndrome with reflux of duodenal fluid, esp. of bile acid.

GR-RELATED EXTRA-ESOPHAGEAL SYMPTOMS

Dysphagia and globus sensation. The differential diagnosis of these symptoms ask for a multidisciplinary approach, as there is a broad variety of underlying diseases such as those of larynx and pharynx, cervical spine, nasal sinus, esophagus, neurological and thyroid diseases. ² Even if there is no esophagitis, GR can be supposed especially when there is a combination of swallowing disturbance and globus

sensation; the diagnosis is verified by the identification of sphincteric dyskinesia.

Hoarseness and chronic laryngitis. Chronic hoarseness that within intense clinical diagnosis cannot be identified as a ENT disease, may be caused by reflux mechanisms of the upper and/or lower esophagus. MICKLEFIELD et al. ³ found in 56 % of patients with chronic hoarseness and laryngeal lesions at least one esophago-pharyngeal reflux episode, most of these patients, however, had no pathological GR, so that the pathomechanisms of these symptoms are not yet clear. In another study JASPERSEN et al. ⁴ tried to find out, whether laryngitis might be caused by an infection with *H. pylori*. However, in none of the infected patients *H. pylori* could be found in tissue or fluid above the stomach. As for an eradication ratio of 85,7 % in all patients esophagitis could no more be found, whereas the laryngitis was persistent in 83,3 % of these patients. On the other hand, laryngitis healed under treatment with omeprazol in all patients without *H. pylori* infection, so that reflux of stomach content can be supposed as damaging noxious agent.

Disturbance of taste and glossopyrosis. Rubeosis of the oral mucosa as well as a thick white fur may lead to the differential diagnosis of gastropathy.

Chronic cough. Prospective studies showed an incidence of GR between 10 % and 20 % in patients with chronic cough. ⁵ In these patients GR can be proved by prolonged pH-measurement. It is controversial, if the underlying pathomechanisms are aspiration of stomach fluid or an irritation of the esophageal mucosal receptors.

Obstructive ventilation disturbance and asthma bronchiale. GR is a common disease even in childhood, and lesions of the bronchial mucosa as well as damage of the ciliary epithelium may cause affections of the lung. ⁶ Patients with therapy resistant obstructive lung affections should be examined for "silent aspiration" of reflux material, as GR may occur without typical clinic symptoms. AHRENS et al. ⁷ reported the case of an eight year old girl with severe therapy resistant non-allergic asthma bronchiale and severe interstitial lung disease, that was resistant to steroid treatment. Treatment with omeprazol was successful, and after hemifundoplication the girl was well, so as chronic aspiration of gastric juice without symptoms of GR was the reason for the lung disease.

Infections of the respiratory tractus. Not only airway

obstruction, but even frequent infections of the lower airways can lead to GR. Mucosal irritation by the reflux material as well as chronic inflammation of the mucosa may reduce the natural defense mechanisms of the mucosa and lead to an increased frequency of airway infections and bacterial exacerbations.

Thoracic pain. Other symptoms that may lead to the differential diagnosis of GR, can be: retrosternal pain without dysphagia or water brush, burning sensations in the region of the heart or on both sides of the sternum. These symptoms must be differentiated from cardiac diseases, esp. angina pectoris, and pulmonary and mediastinal affections as well.

"Cardialgia". Some patients complain of a combination of sore throat, epigastric pressure and "cardiac pressure" or "cardiac pain" as well as of a sensation of irregular heartbeat, but they deny water brush. In these cases and if a cardiac reason can be excluded, GR and gastritis or gastric ulcer might be found. The sensation of cardialgia is caused by aerophagia, as the irritation of the phrenic nerve itself causes cardiac symptoms. Aerophagia is a well-known symptom in cardiac and circulation complaints.

There are some more extraesophageal symptoms of GR, which do not occur very often, e.g. evaluation of laryngeal or tracheal ulcer, subglottic stenosis, laryngospasm and cricopharyngeal spasm, stridor, pain of the lateral neck, torticollis, otalgia. Severe symptoms such as pneumonia, apnea, cyanosis and stridor are usually found only in cases of massive reflux and direct airway exposure to gastric acid, mainly in children. ¹ The acid exposure has recently been discussed as one causative factor of the sudden infant death syndrome (SIDS). Obviously the larynx plays a pivotal role in the development of apnea due to reflux. ⁸

It is of clinical significance that the natural lock mechanism of the upper and lower esophageal sphincter is broken through by a stomach tube, as gastric juice may flow upwards along the remaining stomach tube with the risk of aspiration of gastric juice and life-threatening aspiration pneumonia. Patients with remaining stomach tube must therefore be laid slightly upwards.

CONCLUSIONS

There is a great variety of extra-esophageal symptoms of GR, that differ very much in each individual. The absence of typical symptoms of GR increases the probability that the physician may misinterpret the causative agents of the

present symptoms. In these cases it is marginal that the patients is conducted by the general practitioner, so that basic diagnosis, e.g. intense case history, examination of the whole body, electrocardiography and pulmonary function test, as well as goaldirected differential diagnostic measures lead to the correct diagnosis.

Because of the fatal effects of chronic reflux of stomach content on the tissue the patients are in need of an effective therapy. Even in cases of therapy resistant obstructive airway disease and excluded pollinosis or allergy as well as no clinical findings on gastroscopy, the physician should begin a treatment e.g. with omeprazol, as GR may be the causative agent. In a general practice these patients did not only complain of difficulty in breathing, but firstly of dry cough in the very early morning; at this time, too, many patients complain of water brash and gastriac pain because of the physiologically higher production of gastric acid, so that it can be supposed the same etiology for both symptoms.

Patients with coma, in anesthesia, with neurological diseases or tracheal, esophageal or laryngeal malformation have to be taken special care of as to avoid an aspiration of gastric

juice. As GR is a common symptom in children, manifestation of GR has to be taken into account even in those children with frequent oto-laryngologic diseases.

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