—Editorial—

Hiatus-Hernia with and without Reflux-Disease

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A functional disorder, an abnormal gastro-oesophageal reflux, apparently is of major importance in a disease process which in former times was known as "epiphrenal syndrome" and was related to a hiatus-hernia. Nowadays one speaks of reflux-disease or reflux-oesophagitis, which especially within the German literature caused a lively discussion (1). In almost all cases of reflux-oesophagitis a hiatus-hernia can be found. On the other hand, a hernia is only in 20% accompanied by a reflux-disease, indicating that these two do not necessarily go together.

This result has its consequences for the therapy to be chosen. Is it possible to limit therapeutic measures to only conservative ones? When is a surgical repair of the hernia or only the abolition of reflux mandatory? Physicians and surgeons have dealt with these questions with the same intensity. Already at the beginning of the 1930's this problem was a subject of dispute between the hospitals of v. BERGMANN (3) and SAUERBRUCH (21), beginning already with how to demonstrate and define a hiatus-hernia. Many, partially monografic publications in the German literature over the past decade led to profound clarification and extinguished some misunderstandings (4).

Generally three forms of hiatus-hernia have to be distinguished:

a. The paraoesophageal hernia where a hernial sac is found besides the cardia which often is at normal level. Within this sac that can be of considerable size, the greater curvature of the stomach will extend more or less far into the thorax.

b. This has to be distinguished from the sliding hiatus-hernia where the physiological ascension of the cardia during the act of swallowing often is markedly enhanced. As a sliding hernia it might be fully reducible and often certain manipulations are necessary to demonstrate the hernia on X-ray, especially when it is of small size and without pathological significance. If it is fixed or if a brachyoesophagus is present, in case of insufficiency of the cardiac sphincter gastro-oesophageal reflux develops, thus favoring the onset of oesophagitis and its symptoms. However, an
oesophagitis of different aetiology may lead to similar sensations.

c. Not infrequently mixed forms will develop where together with
the formation of a paraoesophageal hernia sac, upward displace-
ment of the cardia into the thorax will be found. Here, X-ray
examination by an experienced examiner will be of more use
than endoscopy where the ring which demonstrates the junction
between oesophageal and gastric mucosa is situated.

Incarcerations practically only occur in paraoesophageal hernias. They
are extremely rare and demand immediate operation. Therefore the
demonstration of such a type of hernia for some surgeons is enough for
their indication for surgery. Nevertheless because of the extreme rarity of
incarceration and because of the capability of the hiatus to dilate one
would be justified to limit the initial therapeutic policy on extensive
information of the patient and on advising him whenever acute symptoms
of the upper GI-tract develop, radiating into the thorax as they usually do,
to have immediate X-ray investigations of thorax, oesophagus and stomach
in a medical center, where if necessary surgery can be performed. If the
patient finds himself unable to follow this regimen, the hernia should be
operated upon prophylactically, same as for frequent or continuous com-
plaints.

Most sliding hernias are found accidentally at X-ray examinations
of the upper gastro-intestinal tract, as they frequently coincide with
duodenal ulcer, less frequently with gastric ulcer. Because of its frequency
in older age groups, however, the question of a direct link between ulcer
and hernia can hardly be answered. If the latter is associated with
oesophagitis, examinations often are initiated because of gastritis, a diag-
nosis made too often and too unreflectedly in practice. Only if insufficiency
of the cardiac sphincter causes a relevant inflammation of the oesoph-
ageal mucosa, it becomes of pathological significance and requires medical
or in some cases even surgical therapy. Therefore today one speaks of
reflux-disease in which a hiatus-hernia is one of the precipitating factors
although not always the most important. Nevertheless some authors could
demonstrate it in almost all cases. Accordingly, together with an insufficient
cardiac sphincter it apparently favors gastro-oesophageal reflux.

The 'epiphrenal syndrome' develops because of hiatus-hernia, ins-
sufficiency of the cardiac sphincter, gastro-oesophageal reflux and oeso-
phagitis. In its main characteristics it is identical with what today we call
reflux-disease. Of major pathogenetical importance is the presence of an
abnormal gastro-oesophageal reflux. The terminus of this syndrome is still
present within the differential diagnostic considerations between cardial
and phrenopulmonal syndromes. The term 'reflux-disease' impressively
shows the pathophysiological relations and especially clarifies the therapeu-
tic measures to be taken.

Next to the question: 'How does a hiatus-hernia develop?' In the case
of the paraoesophageal hernia as also for other abdominal hernias the
causes are preformed gap of weak connective tissue of muscles. A
precipitating factor of major importance is abnormal elevation of intra-
abdominal pressure, either caused by chronic distension, meteorism,
pregnancy, ascites, exogenically exerted pressure or less frequently acute blunt trauma. The extremely low incidence of hernias in Africans probably is due to diet and lifestyle leading to less meteorism. In Europeans and North Americans one speaks of Saint's triad when gall stones, diverticulosis coli and hiatus-hernia are associated. The common cause for it is seen in unphysiological diet and its consequences.

The same mechanisms are responsible for the development of a sliding hernia, where insufficient fixation of the stomach in a hiatus with weakened connective tissues is a necessary prerequisite. This would explain the increasing incidence with aging caused by increasing musculature and connective tissue degeneration. This leads to a loosening of the phrenoesophageal membrane. H.H. BERG (2) said that the loss of fat in the meagre pycnic also could be of some relevance.

A question still unanswered is what leads to the insufficiency of the cardiac sphincter and therewith to abnormal reflux. This question is of major importance. The theories available concerning the sphincter-like mechanisms of the cardia are still contradictory. Convincing is the theory of STELZNER and LIERSE (23), who could demonstrate a musculature organised in a spiral vorscrew-shaped formation which on contraction will lead to opening and on relaxation to closing to the gastric orifice. BLUM and SIEWERT (5, 22) also suggested a sphincter in addition, although to find a corresponding musculature still causes difficulties. KUNATH (16) extensively worked on the motor functions of the oesophagus and studied the opening and closing functions at the gastric entry. When a sliding hernia is developed, the passage of the oesophagus, which normally comes from right posterior oblique is changed to an oblique position leading to a loss in tone and opening of the gastric orifice. In functional studies HEITMANN (10) could demonstrate that patients bearing a hernia apart from normotonic function of the sphincter increasingly show hypotonic and only rarely show hypertonic function.

As far as the clinical judgement of a hiatus-hernia is concerned, one has to bear in mind that, as already mentioned, only in less than 20% the demonstration of a sliding hernia is associated with reflux disease. Therefore an axial sliding hernia alone cannot be regarded as a disease itself. On the other hand, from the observation, that reflux-disease only in exceptional cases occurs without hiatus-hernia, one has to conclude, that it is an important predisposing factor.

The severity and extension of reflux oesophagitis is of crucial importance for the severity of symptoms in the epiphrenal syndrome. When occurring on lying down at night, the inflammation of the oesophageal mucosa usually is more severe as when occurring in the sitting or standing position. This is probably due to a 'self-cleaning effect' functioning better when the body is upright. Inflammation may be absent despite considerable reflux. BLUM (5) speaks of 'day-belchers' and 'night-burners' where heartburn and corresponding retrosternal sensations predominate.

Endoscopically four stages of oesophagitis have to be distinguished:
I. Erosive mucosal defects, edema, exsudation
II. Confluent defects
III. The lesions affect the whole circumference

IV. Chronic changes with stenosis and ulcer formation. Danger of stenosis, even perforation and later also development of carcinoma. Columnar cell-metaplasia. (Barrett-Syndrome).

Whereas the first stages in most cases are approachable with medical therapy, stage IV and occasionally even stage III demand surgical therapy for abolition of gastro-oesophageal reflux and eventual repair of the hiatus-hernia (8). The fact, that especially in recent years surgeons have dealt with the elucidation of the pathophysiology as well as with the development of surgical techniques which are effective in the long term, very impressively demonstrates that rather than to repair a pathological-anatomical disorder, it is important to restore proper functions. Fundoplication, fixation of the stomach (Gastropexie) and repair of the hernia recently were supplemented (15) by the method of HILL (13). KUNATH, MAH MUT, WIENBECK and BERGES recently mention a technique which is of low risk for the patient where reflux and sliding hernia are eradicated, called Tores-plastic. From manometrical measurements with a multiluminal tube as well as from pH-mesurements there is evidence, that the sphincter-function between stomach and oesophagus really can be improved with this method. An axial sliding hernia is only of pathological significance if found associated with reflux-disease where at the size of the hernia not in the least correlates to the severity of symptoms. It is of crucial importance, what its consequences are and whether there are coexisting diseases. If an epiphrenal syndrome develops, apart from acid taste, pain on swallowing, belching and regurgitation, the patient experiences heartburn which can increase to retrosternal and pharyngeal burning and by which he is troubled because of frequency as well as severity. Only rarely vomiting occurs. Central upper abdominal discomfort often is misinterpreted as gastritis as shown clearly by a ques tioning done by MÜLLER, LISSNER und. BLUM (19). In addition occasionally one finds substernal pressure in the upper abdominal region and sensations mimicking stenocardia. Precipitating factors can be the intake of alcohol or nicotin. Often these symptoms occur after a fatty and voluminous meal. They can be associated with painful belching, especially after aerophagia (15).

Dysphagia only occurs in 10% of hiatus-hernias as could be demonstrated by HEITMANN (11) in his studies on the functions of the oesophagus. Apparently in these cases cardiac insufficiency is missing.

Mucosal erosions associated with oesophagitis above and within the cardia cause bleeding, rarely in the form of hæmatemesis but mostly as profuse occult bleeding. A subsequent hypochromic anemia and hypopiderinemia cause general symptoms such as adynia, fatigue, reduction of physical performance and an increased susceptibility to infection. If the epiphrenal syndrome is not very impressive, the cause for these symptoms remains occult and is inaccessible to treatment. When the haemoglobin is below 11% this is often accompanied by serum iron values comparatively much lower than to be expected, indicating, that an insidious bloodloss has been present for a long time already. Final diagnosis will be left to X-ray and endoscopical examinations. Occasionally a Mallory-Weiss syndrome is
found at endoscopy.

Another possible cause for occult bloodloss is a prolapse of gastric mucosa into the cardia, encountered occasionally in hiatus hernia. This mucosa has the tendency to bleed even without excessive lesions. If reduction does not occur spontaneously, it can be easily performed with the endoscope. The urge to vomit, dysphagia and ruminating may be the physical signs hinting at this process which does not find adequate attention (18).

It is now apt to ask, whether the development of an epiphrenal syndrome affects the heart. Within the gastroenterological literature this is only rarely indicated. MARKS and THURNSTON (17) reported on three patients with a big paraoesophageal hernia who had episodes of severe sinus-bradycardia, which resolved after operation. It is well conceivable, that large hernias with considerable extension into the thorax can produce this kind of stenocardial sensations. Considering the higher age, an accidental coincidence of an epiphrenal syndrome and coronary heart disease is probable. HAFTER (9) suggests the Bernstein-Test (administration of 0,1 N HCl into the oesophagus) and EKG-examinations for differentiation.

The aspects for therapy can be deduced from the pathophysiological and clinical data mentioned. The hiatus-hernia without symptoms is of no pathological significance except for the paraoesophageal type, where as already mentioned, there is the danger of incarceration. When there are severe symptoms of reflux disease, these have to be treated medically in the initial stage and this therapy should be extended to months to reach at a full cure of the oesophagitis. All etiological factors have to be considered. As far as drug therapy is concerned antacids are of greatest relevance not at last because of rapid relief of symptoms. Recently employed drugs which block acid production (cimetidine and others) or influence sphincter tone as well as oesophageal motility (24) as far as their effectivity is concerned. A final judgement is not possible yet.

Failure of conservative treatment of changes in life-style and diet let the question arise, whether surgical intervention becomes necessary. Of crucial importance for the indication is the severity of reflux-disease and subsequent oesophagitis. This problem has been extensively reviewed in the following monographs: NISSEN, ROSETTI and SIEWERT (20), HESS and LIECHTI (12), BLUM and SIEWERT (6) and prior to these by IMDAHL (14).

In a questioning among 150 surgeons in Switzerland done by BRÜHLMANN at all(7), only half of them found an axial sliding hernia and reflux-disease to be a relative and only very few found it to be an absolute indication for surgery. Furthermore an extensive functional analysis (HEITMANN (11)) should be performed to assess the amount of reflux and cardiac insufficiency for example manometrically, with a trilumen tube. NISSEN, ROSETTI and SIEWERT (20) restrain from operation in patients above the age of 70 for various reasons. Otherwise their indication is based on the stage III and IV of oesophagitis in the axial sliding hernia.

At the end it should be re-emphasized that a sliding hiatus-hernia only may be regarded as a cause of disease if it is a significant factor in the onset
of reflux disease and corresponding complaints are present. Furthermore it needs to be mentioned that demonstration of a hernia in the evaluation of abdominal disease must not tempt the physician restrain from further diagnostic procedures, as it may well be an accidental finding with only minor pathological significance.

REFERENCES