PEPTIC ULCER DISEASE

Peptic ulcers of stomach and duodenum (Peptic ulcer disease)

- Definition- general chronic and relapsing disease characterized by seasonal exacerbations with ulceration of the stomach wall or the duodenum. An *ulcer is defined as disruption of the mucosal integrity of the stomach and/or duodenum leading to a local defect or excavation due to active inflammation. Prevalence of peptic ulcer is near 10-12% of adults in Europe and USA.*

Peptic ulcer

- *Etiology.*
- *-Helicobacter pylori (HP) is the main etiology agent in approximately 95% of duodenal ulcers and in 70% of stomach ulcers.*
- *-Non steroidal anti inflammatory medication (NSAD), steroids, stress, burns, hyperparathyroidism may cause peptic ulcers. The predisposing factors are heredity (blood type 0, elevated pepsinogen levels, indicating maximal acid secretory ability of the stomach) and environmental factors, among which nutrition is the leading one. Irregular nutrition, with prevalence of easily assimilable carbohydrates in the diet, excess ingestion of poorly assimilated and long digested foods cause hypersecretion of the stomach. In the presence of the main factors, the predisposing factors cause ulceration with time. Alcohol and nicotine have also an adverse effect on the gastric mucosa.*

Peptic ulcer

- *Pathogenesis. Although the traditional theories regarding the pathogenesis of peptic ulcers focus on acid hypersecretion, this finding is not universal, and it is now known that hypersecretion is not the primary mechanism by which most ulceration occurs. Certain factors, namely H. pylori and NSAIDs, disrupt the normal mucosal defense and repair, making the mucosa more susceptible to the attack of acid.*

Peptic ulcer

- *Classification of peptic ulcer*
- *(1) According to localization: a) Gastric ulcer (ulcer of stomach) - cardial, subcardial, corporeal gastric ulcer; ulcer of lesser curvature, ulcer of greater curvature; antral, prepyloric, pyloric ulcer. b) Duodenal ulcer - duodena bulb ulcer, postbulbar ulcer.*
- *(2) According to stage of disease - exacerbation, remission (incomplete, complete).*
- *(3) Complications of peptic ulcer - gastric (duodenal) bleeding, perforated ulcer, penetrating ulcer, malignant ulcer, pyloric cicatrical stenosis.*

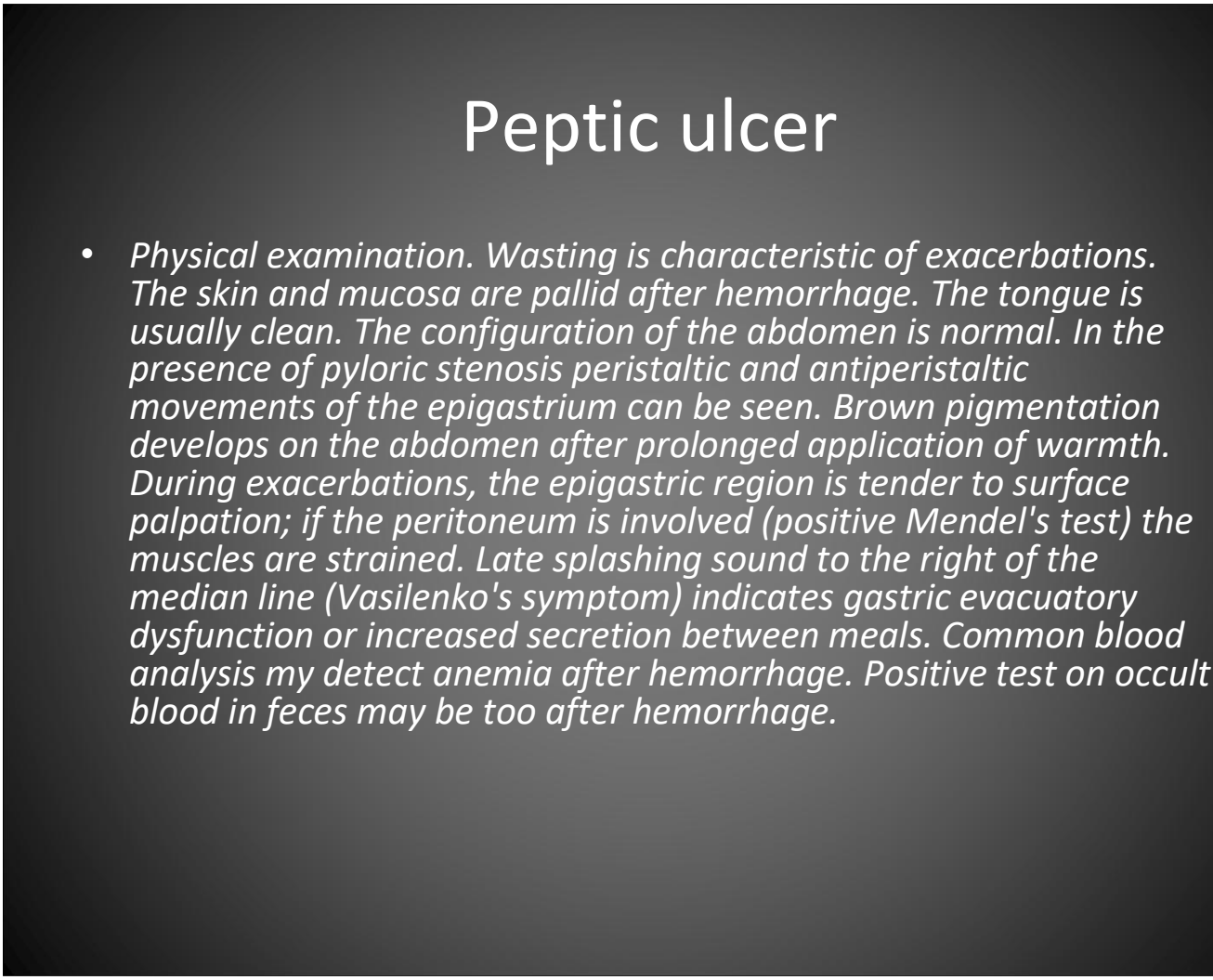
- **Duodenal ulcer**

  In duodenal ulcer - pain - localized in the epigastrium and to the right of the median line, spreading to the right hypochondrium; it is characterized by so-called late pain - fasting or overnight pain (after midnight), which subsides or disappears after taking a few bites of food (bread, milk) or alkaline medicines. Season - spring and autumn. It is accompanied by frequent dyspeptic complaints: pyrosis, nausea, acid bursts, vomiting of highly acidic materials.

- **Stomach ulcer**

  In stomach ulcer - pain localized in the epigastrium and to the left of the median line, with irradiation to the left hypochondrium; occurs immediately or soon - 1/2h after food intake and decreases after vomiting. There may be seasonality in the chronic course - mainly in spring and autumn, but it is not always clear. It is accompanied by dyspeptic complaints: heaviness in the epigastrium, bitter taste in the mouth, nausea, vomiting. Symptoms are provoked by rough foods.

Physical examination of patient with peptic ulcer



Inspection of abdomen

- Inspection of the abdomen should be done with the patient in vertical or lying position. Research of an abdomen in a vertical position begins with survey. Thus the doctor sits on a chair, and the patient faces the doctor, the person to him, completely having naked the abdomen.
- For exact delimitation of localization of the signs revealed by objective inspection, abdomen conditionally part on some regions. Two horizontal lines (the first line bridges the tenth ribs, the second - the top edges of ileac bones) divide a front

abdominal wall part on three departments, locating one under another: *epi-, meso-and hypogastric regions*. Two collateral vertical lines conducted on outside edges of rectus abdominis muscles divide epigastric region into two *subcostal (hypogastric) regions* (*right and left*) and (in more narrow sense) *epigastric region* posed in the middle; mesogastric - on two *lateral* flancs (flanks) and on *umbilical region*; hypogastric region - on two *inguinal (ileac) regions* locating on each side and *suprapubic region*.

- At the beginning of survey the form of the abdomen is defined. In the healthy person the form of the abdomen substantially depends on his constitution.

Percussion of abdomen

- Percussion of the abdomen is only relatively informative. Percussion of the anterior abdominal wall at points of projection of the intestine gives tympany of various characters which depends on the uneven distribution of gaseous, liquid or solid intestinal contents.
- *Percussion of abdomen in vertical position* of the patient is used for revealing free fluid in an abdominal cavity and definitions of its level. By percussion on midline and lateral flanks from top to down, it is possible to differentiate the tympanic sound above intestines and the dull sound lower than fluid level.
- *In horizontal position of the patient* percussion of the abdomen is performed from umbilicus on midline to epigastrium and hypogastrium, and from umbilicus - to flanks in lateral directions. With the purpose of differentiation dull sounds originated from free fluid and contents of intestines the physician can repeat percussion from the umbilicus to flanks in lateral directions in position of the patient on the side of body. At presence of ascites the level of dull sound is changed in this position of patient.

Palpation of abdomen:

- Surface tentative palpation and deep sliding palpation of abdomen

The common rules of the surface and the deep palpation

- It is necessary that the abdominal cavity should be accessible to palpation, i.e. that its muscles of the anterior abdominal wall (prelum) be relaxed, and that the examiner should not provoke their straining by his manipulations. The patient should relax in his bed. (The bed should not be too soft.) His legs should be stretched and the arms flexed on the chest. The patient's breathing should not be deep; his head should rest against a small firm pillow. This position ensures relaxation of the abdominal muscles. The physician takes his place by the right side of the bed, facing the patient. The chair should be firm and level with the patient's bed. The ambient temperature should be comfortable for the patient, and the hands of the doctor should be warm and dry, nails must be short. A palpation is performed only after an auscultation and a percussion of the abdominal cavity.
- The examining movements should be careful and gentle so as not to hurt the patient. Touching the abdomen roughly with cold hands will cause reflex contraction of the prelum to interfere with palpation of the abdomen. The patient with distended abdomen should first be given laxative or enema to empty the bowels. These are the conditions for palpation of the patient in the recumbent position. But some organs or their parts can only be palpated when they hang by gravity with the patient in the vertical position. Thus the left lobe of the liver, the lesser curvature of the stomach, the spleen, the kidneys, the cecum, or tumours can become palpable. The epigastrium and the lateral parts of the abdominal cavity should also be palpated with the patient in the vertical position.

- *Surface and deep palpation* are used. *The surface palpation* examines condition of the anterior abdominal wall. The d*eep palpation* is used to establish normal topographic relations between the abdominal organs and their normal physical condition; the other object is to detect any possible pathology that changes the morphological condition of the organs and their topographic relations responsible for their dysfunction, to locate the defect,
- and to determine its nature. In other words, the deep palpation gives information on the topography of the abdominal cavity (topographic palpation).

The deep sliding methodical topographic palpation

- When starting deep palpation the examiner should always be aware of the anatomical relations in the abdominal cavity, the shape and physical properties of the organs, their supporting structures and possible deviations in topographical relations that may depend on the constitution of the patient, his special condition, nutrition, relaxation of the abdominal muscles, etc.
- Obraztsov used the double-checking principle in his examinations. For example, in order to make sure that a given section of the intestine is actually ileum terminale it is necessary to locate the cecum; to determine the size of the stomach, the palpatory findings are checked by percussion and percussive palpation of the stomach. Respiratory excursions of the organs should be taken into consideration during palpation according to a strictly predetermined plan, beginning with more readily accessible parts.

When palpating, the wrist and forearm should be in the same horizontal plane where possible, even if this means bending down or kneeling by the patient's side (Fig. 8.9). The best palpation technique involves moulding the relaxed right hand to the abdominal wall, not to

hold it rigid. The best movement is gentle but with firm pressure, with the fingers held almost straight but with slight flexion at the metacarpophalangeal joints, and certainly avoid sudden poking with the fingertips

Palpation of intra-abdominal structures is an imperfect process in which the great sensitivity of the sense of touch and pressure is heavily masked by the abdominal wall tissue. It is unusual for structures to be very easily palpable, and so it is necessary to concentrate fully on the task and to try and visualize the normal anatomical structures and what might be palpable beneath the examining hand. It may be necessary to repeat the palpation more slowly and deeply. Putting the left hand on top of the right allows increased pressure to be exerted, such as with an obese or very muscular patient.

A small proportion of patients find it impossible to relax their abdominal muscles when being examined.

In such cases it may help to ask them to breathe deeply, to bend their knees up, or to distract their attention in other ways. No matter how experienced the examiner, little will be gained from palpation of a poorly relaxed abdomen.

It is helpful to have a logical sequence to follow and, if this is done as a matter of routine, then no important point will be omitted.

Sources:

1. VITEBSK STATE MEDICAL UNIVERSITY DEPARTMENT OF PROPEDEUTICS OF INTERNAL DISEASES.GENERAL PROPEDEUTICS OF INTERNAL DISEASES LECTURE COURSE Compiled by L.M. Nemtsov, MD (2-е издание) Vitebsk, EI «VSMU» 2016
2. Hutchinson's Clinical Methods. 22nd edition. By Michael Swash and Michael Glynn. Saunders Ltd, 2007
3. Duale Reihe Anamnese und Klinische Untersuchung. Middeke M, Füeßl HS. Thieme, 2010
4. Bates Guide to Physical Examination and History Taking. 10th edition. Lippincott Williams & Wilkins, 2008