

Types, Complications, Prevalence and Methods of Investigation of Chronic Ulcer Disease of the Stomach and Duodenum

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Abstract: The article presents information from domestic and foreign sources on the frequency of complications of chronic gastric and duodenal ulcers, their distribution and diagnosis of complications.

Keywords: chronic peptic ulcer, bleeding, complications, stomach, duodenum.

Relevance. Peptic ulcer disease occurs in people of any age, but most often in 30-40 years, it affects about 5% of the adult population. Urban residents suffer from stomach ulcers more often than rural residents, men suffer 6-7 times more often than women. Gastrointestinal bleeding is the most common complication. Sudden massive bleeding can be life-threatening.[1][11] It is associated with a mortality rate of 5% to 10% [14]. In Western countries, the percentage of people infected with *H. pylori* is roughly proportional to age (ie, 20% in their 20s, 30% in their 30s, 80% in their 80s, etc.). Prevalence is high in third world countries, where it is 70% of the population, and in developed countries it is a maximum of 40%. In general, *H. pylori* infections have decreased worldwide, more so in developed countries. Transmission occurs through food, contaminated groundwater, or human saliva (eg, kissing or sharing food containers).[17] Peptic ulcer disease is often associated with *Helicobacter pylori* infection, but can also occur without it, including alcohol and energy drinks, frequent coffee consumption, chronic overwork, acute or long-term stress, injuries, fast food, improper diet with bitter, sour, salty or salty, extremely cold or hot foods, lack of proper sleep, NSAIDs, steroid hormones, sulfonamides, potassium chloride, anticoagulants, nitrofurans taking drugs, genetic predisposition, hyperparathyroidism, age-related hormonal changes, chronic gastritis, diabetes. If *H. pylori* is diagnosed based on the history and physical examination, investigations should be performed to determine the exact diagnosis and underlying etiology. Simply put, the diagnosis of peptic ulcer disease in general, and more specifically, duodenal ulcer disease, can be made directly by visualizing the ulcer on upper endoscopy. The evaluation process will depend on what tests the patient has done to evaluate his symptoms beforehand. Patients who have radiographs suggestive of ulceration but do not have ulcer/perforation or suspicious signal signs can be treated without endoscopy. CT scan performed to evaluate abdominal pain may reveal a non-perforated peptic ulcer. However, most patients will need a referral for an esophagogastroduodenoscopy (EGD) for further evaluation. Duodenal ulcers occur most often in the first part of the duodenum (more than 95%), about 90% are located within 3 cm of the pylorus, and are usually less than or equal to 1 cm in diameter. Barium endoscopy is an option for patients with contraindications to EGD. After the diagnosis of peptic ulcer disease, it is very important to determine the etiology of the disease, because it helps to develop a treatment plan for the patient, not only acute, but also a long-term plan that helps prevent recurrence. Twelve fingers given the high correlation of *H. pylori* co-infection with peptic ulcer disease, individuals evaluated for *H. pylori* will need further investigations to make a formal diagnosis.[8] A tissue biopsy during EGD helps with the diagnosis. However, other

non-invasive tests may be performed to rule out *H. pylori* as part of the cause. If the patient has undergone EGD, a biopsy can be taken and further examination with urease test and histology. Less invasive options include urea breath testing, stool antigen testing, and serologic testing. Serology is less common, because it can remain positive if the patient was previously infected and does not mean an active infection. The urea breath test has high specificity. However, false-negative results may occur when a proton pump inhibitor (PPI) is used. Examination of fecal antigen can be used to diagnose and prove eradication, because it means an ongoing infection. If gastric ulcer is suspected, the following tests are prescribed:

Detection of *Helicobacter pylori* in the body. Cytological examination of gastric biopsy, detection of antigens to the pathogen in the blood, urease breath or antigen tests. Complete blood count to look for signs of an inflammatory reaction or bleeding. Blood biochemical analysis, determination of CRP, liver enzyme levels. Hidden blood test. Determination of gastrin-17 level in blood as a method of diagnosing pancreatic gastrinoma. Pepsinogens of the first and second type, with calculation of their ratios. Iron concentration in blood serum. Instrumental diagnosis of gastric ulcer includes: endoscopic examination of hollow digestive organs with collection of biomaterial from damaged areas for laboratory analysis; computed tomography of the internal organs, if this is not possible, ultrasound examination of the abdominal organs or X-ray examination of the stomach and duodenum, with the prior introduction of an X-ray contrast agent; endogastric determination of the acidity of gastric juice. Complications of gastric and duodenal ulcers include bleeding, perforation, penetration, pyloric stenosis, and malignant growth.

Penetration is one of the common complications of peptic ulcer disease, in which the ulcer process causes the stomach wall to adhere to one of the adjacent organs (for example, the intestine or pancreas) and the ulcer gradually penetrates into this organ. Penetration is more than perforation. It is less dangerous, because with it the wound remains closed and massive infection of the abdominal cavity with microbes (peritonitis) does not occur. However, the patient can also die from penetration. The most dangerous is penetration into the pancreas.

Pyloric stenosis The pylorus is the last part of the stomach that connects it to the duodenum. Ulcers appear especially often in the pyloric area, because this part of the stomach is the most suitable for the life of *Helicobacter* (a bacterium that causes ulcer formation) and here the acidity of gastric juice is maximum. According to the anatomical structure, the pylorus of the stomach is a narrow channel equipped with muscle rings that can contract and relax. When the muscles contract, the pyloric canal closes and the stomach cavity separates from the intestinal cavity. When the pyloric muscles relax, the canal expands and part of the food from the stomach passes into the duodenum for further digestion. Pyloric stenosis is characterized by irreversible narrowing and deformation on the background of a chronic ulcer affecting this part of the stomach. In fact, the stomach ulcer turns into a large, hard scar, which deforms and tightens the pyloric canal, which makes it lose its ability to expand and therefore pass food to the duodenum. It may appear years later. The disease begins with a feeling of fullness in the stomach after eating, heaviness and pain in the stomach, sour belching with an unpleasant smell. Patients also complain that long after eating, they hear "fluid" in the stomach and feel that the stomach is full. In fact, patients with pyloric stenosis die of exhaustion, because sooner or later the stomach due to the increase of connective tissue in the area of the ulcer, the connection between the stomach and the intestine is completely broken. Treatment of pyloric stenosis can only be surgery. Usually, during the operation, the diseased part of the stomach is removed, and the healthy part of the organ is sewn to the small intestine to restore the connection.

Gastric cancer-Malignant degeneration of gastric ulcer is the most dangerous complication of gastric ulcer disease. Outwardly, superficial forms of stomach cancer are very similar to ulcers, and therefore sometimes it is very difficult to distinguish them. Gastric ulcer can lead to cancer or develop from a tumor. The transformation of gastric ulcer into cancer occurs due to the violation of cell proliferation and maturation processes in the center of chronic inflammation that

occurs in the ulcer. Often, a preexisting tumor causes the ulcer. Gastric cancer is a very aggressive tumor that is difficult to treat and often leads to the death of the patient. Gastric ulcer malignancy (malignancy) is often observed in patients who have had an ulcer for many years. In such cases, stomach cancer is the final step in the development of the disease. The development of stomach cancer can remain invisible to the patient for a long time. The first symptoms of cancer are a change in the nature of pain: if a stomach ulcer is characterized by hunger pains that subside after eating, the pain with cancer ceases to depend on food intake and remains almost constant. Patients may also notice food intolerance and weight loss. Stomach cancer detected in the initial stages is completely cured by surgical methods (removal of the affected area of the stomach). In the later stages of cancer, when there are metastases in other organs, the treatment of cancer is very difficult and often does not lead to any results.

Perforation of a gastric ulcer is the appearance of a permeable defect in the wall of the stomach or intestine, the release of its contents into the free abdominal cavity. Perforation can also occur in cases of asymptomatic ulcers. Leakage of the contents of the duodenum or stomach into the abdominal cavity quickly leads to the development of diffuse or local peritonitis. Three periods are conditionally distinguished in the clinical course of ulcer perforation. The first period lasts 3-6 hours. before vomiting) in the epigastric area, there is a sudden sharp constant "dagger" pain like "knife stab", "hot water burn". Irritation of a significant receptor area with the resulting content is often accompanied by a painful shock. As soon as the capacity of the nerve receptors is exhausted, a short-term imaginary well-being begins. After that, diffuse peritonitis begins to develop rapidly. The second period ("illusory well-being") begins 6-12 hours after the onset of the disease. Acute symptoms are smoothed out, the patient's well-being improves and abdominal pain decreases. Improving the patient's condition can confuse both the patient and the doctor. At the same time, when analyzing clinical data, it is possible to determine an increase in signs of the development of peritonitis (increased pulse and respiration, increased body temperature, intestinal paresis, leukocytosis). The third period (period of widespread peritonitis) from 12-24 hours then it begins. By this time, the patient's condition worsens: independent pains in the abdomen are moderate, repeated vomiting appears. Body temperature is high (38-40 ° C), sometimes low. Pulse 110-120 per minute, weak filling; blood pressure decreases. During this period, all the symptoms of the systemic inflammatory response syndrome are detected, which means the risk of developing multiple organ failure and septic shock. Perforation of a wound in the free abdominal cavity is an absolute indication for urgent surgery. The earlier the diagnosis and the operation The main goal of surgical treatment of a perforated wound is to save the patient's life, prevent peritonitis or start early treatment. Depending on the severity of the patient's condition, the stage of development of peritonitis, the duration of the ulcer and the conditions of the operation, it is used for suturing the wound, cutting the wound with pyloroplasty in combination with vagotomy, and callus. gastric ulcer - gastric resection. Suturing of gastric ulcer (palliative surgery) is performed in cases of widespread peritonitis, high surgical risk (severe concomitant diseases, old age of the patient), perforation of wounds caused by stress and medication. Selective proximal vagotomy or pyloroplasty with suturing of the perforated wound should be performed in specialized hospitals where surgeons are familiar with the technique of organ-sparing operations, if no more than 6-12 hours have passed after the perforation and there is no peritonitis. Gastric resection is indicated for perforation of chronic callous gastric ulcer in the absence of peritonitis and increased risk of surgery, especially when malignancy of the ulcer is suspected.

Conclusions: Gastric ulcer disease is most common among people aged 30-40 and is 5%. Urban residents are more likely to suffer from ulcers than rural residents. Men are affected 6-7 times more often than women. The most common complication of chronic gastric ulcer is bleeding from the stomach, which accounts for 15-20%, perforation 10-15%, stenosis of the esophageal part 9-12%. , malignization is 5-10%. Clinical anamnestic analysis, gastroduodenoscopy is of primary importance in the early diagnosis of chronic stomach and duodenal ulcers, and X-ray, MRT, and CT scans play an important role as additional tests.

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