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CLINICAL EXPERIENCE IN DIAGNOSIS AND TREATMENT OF MALLORY-WEISS SYNDROME IN A MULTIDISCIPLINARY SURGICAL HOSPITAL

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The **aim** of this study was retrospective assessment of the effectiveness of surgical treatment tactics in the treatment of Mallory-Weiss syndrome in a specific surgical hospital. **Material and methods.** The material is based on a clinical analysis of the results of observations of 73 patients with MWS who were treated in surgical hospitals of the of the Republican Hospital №2 – Center for Emergency Medical Care (CEMC) of the Republic of Sakha (Yakutia) in the period from in the period from 2019 to 2023. **Results.** In the course of the study, it was established that the widespread use of endoscopic methods of stopping bleeding in MWS in clinical practice of multidisciplinary surgical hospitals can improve the immediate results of treatment, reduce the number of complications and reduce mortality. **Conclusion.** The results of the study we presented allow us to recommend the use of endoscopic methods of hemostasis for MWS as the method of choice.

Keywords. Mallory-Weiss syndrome, endoscopic hemostasis, surgical treatment tactics.

Introduction. One of the most common pathologies encountered in urgent surgery is “rupture hemorrhagic syndrome”, or Mallory-Weiss syndrome (MWS). The detection rate among all types of bleeding from the upper gastrointestinal tract is, as a rule, at least 15-20% [3] and is characterized by a fairly high percentage of the risk of re-bleeding (at least 20-25%), as well as the likely development of severe complications (at least 1-3%) [4]. Mortality in this case can reach values of 5-10%, especially with the development of tension pneumothorax, purulent mediastinitis, and severe forms of widespread purulent peritonitis [6]. The above indicators clearly reflect the real problem of diagnosing and treating MWS along with other pathologies of the gastrointestinal tract that are accompanied by bleeding: gastroduodenal ulcers, portal hypertension syndrome, esophagitis, vascular abnormalities of the gastrointestinal tract, etc.

It is known that in the vast majority of cases (at least 75-80%), the onset of this disease is associated with repeated or uncontrollable vomiting after a heavy meal, or after drinking alcohol and its surrogates [3]. Also, the development of MWS can be facilitated by physical exercise after a heavy meal, persistent hiccups, abdominal trauma, as well as the procedure of esophagogastroduodenoscopy in patients unprepared for this [1]. Cases of the occurrence of MWS due to vomiting occurring against the background of a number of diseases and pathological conditions, such as mechanical and dynamic intestinal obstruction, damage to the peripheral and central nervous system, and vestibular disorders are not uncommon [2].

Direct surgical treatment tactics for patients with MWS today include the use of minimally invasive endoscopic technologies of combined effects on the bleeding site (chemical, physical and mechanical methods of hemostasis). In cases of unsuccessful use of endoscopic techniques, an informed decision is made to carry out traditional laparotomy, gastrotomy and suturing of the resulting injuries. At the same time, a wide range of conservative measures is carried out, including correction of hemostasis, water and electrolyte disturbances, suppression of gastric secretory function, and, if necessary, blood transfusions and blood substitutes [1, 4, 5]. There is no doubt that the success of the entire strategy for treating the disease depends entirely on the competent use of the algorithm of actions for applying the most effective methods of endoscopic hemostasis, taking into account the prognosis of recurrent bleeding, the presence or absence of comorbid pathology, dynamic control over the general condition and much more.

The **aim** of this study. To retrospectively evaluate the effectiveness of surgical treatment tactics in the treatment of Mallory-Weiss syndrome in a specific surgical hospital.

Material and methods. The presented material is based on a clinical analysis of the results of treatment of 73 patients with Mallory-Weiss syndrome who were treated in surgical hospitals of the Republican Hospital № 2 – Center for Emergency Medical Care (CEMC) of the Republic of Sakha (Yakutia) in the period from 2019 to 2023. The diagnosis of MWS was made on the basis of a standard clinical examination. The average age of the patients was 36,7±2,1 years, there were 51 (69,9%) men and 22 (30,1%) women. To assess the depth of damage to the walls of the esophagus and stomach, we used the clinical and anatomical classification of Sh.V. Timerbulatov (2010) [6]. To predict the risk of bleeding from the upper gastrointestinal tract, was used the classification of J.A. Forrest (1974) [7]. The therapeutic and diagnostic procedure of esophagogastroduodenoscopy (EGD) was carried out by us according to standard methods and in accordance with developed generally accepted technical techniques using a GIF-2T160 video gastroscope from «Olympus» (Japan). All patients with suspected bleeding from the upper gastrointestinal tract were immediately placed in the anti-shock therapy ward, located directly in the emergency room of RH №

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2 – CEMC. All endoscopic examinations were performed during the first 2 hours of the patients stay in the clinic after the necessary preparation (stabilization of the general condition, gastric lavage, consultation with specialists of related specialties) under the supervision of an anesthesiologist-resuscitator. In cases of massive bleeding, EGD performed in a fully operational operating room and in the presence of a team of surgeons.

Results and discussion. According to our observations, the average time from the onset of bleeding to admission to the clinic was: from 1 to 3 hours – in 37 (50,7%) patients, from 3 to 6 hours – in 25 (34,2%) patients, from 6 to 12 hours – in 7 (9,6%) and more than 12 hours – in 4 (5,5%) patients. As a result of primary esophagogastroduodenoscopy, it was possible to detect the source of bleeding in 86,7% of patients. In other cases, additional time was required to prepare the upper gastrointestinal tract for examination. This was due to the urgency of the incoming patients, and whose stomach could be filled with food masses.

According to our observations, the immediate cause of MWS was: consumption of alcohol and its surrogates – in 59 (80,8%) patients, heavy food intake – in 10 (13,7%) patients, intestinal obstruction – in 4 (5,5%) sick. The presence of ongoing bleeding was recorded in 45 (61,7%) patients with MWS, its absence – in 28 (38,3%). When assessing signs of bleeding according to the classification of J.A. Forrest (1974) we obtained the following data (table № 1):

The depth of the detected defects was variable. So, according to the classification of Sh.V. Timerbulatov (2010) on the stages of MWS, obtained the following data (table № 2):

In our observations, stage IV MWS – esophageal rupture with complications in the form of pneumomediastinum, pneumothorax, pneumoperitoneum was not observed. The predominant localization of the rupture was the cardioesophageal junction – in 61 (83,6%) patients, less often, isolated gastric and esophageal localization of the defect – in 9 (12,3%) and 3 (4,1%) patients.

According to our observations, in all cases, with ongoing bleeding from damaged areas caused by MWS, it was possible to achieve bleeding stop using endoscopic hemostasis methods. Analysis of observations showed that the most effective method of stopping bleeding when it was jet-like in nature was mechanical – the application of endoscopic clips. This type of hemostasis was used in 10 (22,2%) patients; not a single case of recurrent bleeding was observed. The combined method of endoscopic hemostasis, usually the use of chemical and physical methods (injections of adrenaline solution and diathermocoagulation or argon plasma coagulation) was used in 35 (77,8%) patients. Recurrent bleeding was observed in only 3 (8,5%) patients. Most often, relapse was associated with coagulation disorders due to severe endogenous intoxication and the development of hepatic-renal failure syndrome. In the same clinical cases, when active bleeding was not observed, preventive measures were performed in the form of injections of vasoconstrictor drugs, diathermocoagulation, and irrigation with ε-aminocapronic acid. In the absence of signs of bleeding, control endoscopic examinations were performed on the 3rd and 5th days of the patient's stay in the surgical hospital. Subsequently, most of the patients (at least 75,5%) were transferred to therapeutic hospitals, mainly gastroenterological departments. The average length of stay of patients with Mallory-Weiss syndrome in a surgical hospital, as a rule, did not exceed 5,5±2.0 days.

In conclusion, it should be noted that the problem of the effectiveness of using various types of endoscopic methods of hemostasis, including for MWS, has been actively developed over the past 25-30 years. For hemostasis and prevention of recurrent bleeding, methods that differ in their range of effects, effectiveness and safety are currently used. An important point in successfully stopping bleeding are preparatory measures and, above all, preparation of the surface of the gastrointestinal tract and the source of bleeding [4]. Thus, in addition to washing the stomach and esophagus, prescribing prokinetics and premedication, irrigation of the area of the source of bleeding with chlorethyl or ethers turned out to be quite effective. The use of ethyls and ethers promotes cooling and drying of tissue, which creates the prerequisites for temporary hemostasis and more effective use in the future of physical and other methods of influencing the source of bleeding [3]. Regarding the frequency and effectiveness of using certain methods of hemostasis, we can say with confidence that everything depends on the specific clinical situation (source and intensity of bleeding, patients condition, availability of the necessary endoscopic equipment and personnel training). Undoubtedly, a medical institution that has a full range of advanced technologies in its arsenal will be able to more effective-

Table 1

Structure and characteristics of bleeding according to J.A. Forrest (1974)

Type	abs.	%
Type F-I-active bleeding (n=45)		
I a (pulsating jet)	14	19.2
I b (blood leakage)	31	42.5
Type F-II-signs of recent bleeding (n=28)		
II a (visible non-bleeding vessel)	7	9.6
II b (fixed thrombus-clot)	15	20.5
II c (flat black spot, black bottom of the defect)	6	8.2
Total:	73	100

Table 2

Structure and characteristics of the stages of MWS according to Sh.V. Timerbulatov (2010)

Stage	abs.	%
Stage I (the rupture involves only the mucous membrane)	21	28.7
Stage II (the rupture involves the submucosal layer)	38	52.1
Stage III (the muscle layer is involved in the rupture zone)	14	19.2
Total:	73	100

ly cope with its tasks. According to world literature [1, 4, 7], the effectiveness of endoscopic methods of hemostasis should be at least 85%, and the risk of complications should not exceed 0,7-1,0%. All this creates the prerequisites for searching for more effective and safe methods of endoscopic hemostasis, as well as improving organizational measures to improve the quality of medical care.

Thus, we can draw the following **conclusions** that the use of endoscopic technologies remains a priority and quite effective direction in surgical treatment tactics for MWS. The wider introduction of endoscopic technologies for MWS helps to reduce the number of complications and mortality rates, as well as the use of traditional invasive methods of treatment. In cases of recurrent bleeding after endoscopic hemostasis, the method of choice remains the use of traditional laparotomy, gastrotomy and bleeding control by suturing the ruptured areas. At the same time, endoscopic technologies help to achieve temporary controlled hemostasis for the purpose of subsequent adequate preoperative preparation in patients with MWS.

References

1. Bogdanovich A.V., Shilinok V.N., Zeldin E.Y. Struktura i taktika lecheniya krovotechenij iz verhnih otdelov zheludochno-kishechnogo trakta [Structure and tactics of treatment of bleeding from the upper gastrointestinal tract]. Bulletin of VSMU. 2016; 3: 40-46 (In Russ.)]. https://doi.org/10.22263/2312-4156.2016.3.40.

2. Goma T.V., Kozlova N.M., Bykov Y.N. Eksperimentalnaya i klinicheskaya gastroenterologiya.Sindrom Mellori-Vejsa u bolnoj s COVID-19 [Experimental and clinical gastroenterology. Mallory-Weiss syndrome in a patient with COVID-19. 2021; 192 (8): 175-180 (In Russ.).] https://doi.org/10.31146/1682-8658-ecg-192-8-175-180.

3. Melnik I.V., Gulomov F.K. [Sovremennye aspekty diagnostiki i lecheniya krovotechenij pri sindrome Mellori-VejsaModern aspects of diagnosis and treatment of bleeding in Mallory-Weiss syndrome].Vestnik ekstrennoj mediciny [Bulletin of emergency medicine. 2012; 4: 85-89 (In. Russ.).]

3. Nazarov S.K., Muhammadzoda R., Mavdzhudov M.M. Etiologiya, patogenez, diagnostika i lechenie sindroma Mellori-Vejsa [Etiology, pathogenesis, diagnosis and treatment of Mallory-Weiss syndrome]. Vestnik Avicenny [Avicenna Bulletin. 2013; 3: 95-100 (In Russ.).]

4. Styazhkina S.N., Tokareva V.Y., Gilfanov A.M. Klinicheskij sluchaj sindroma Mellori-Vejsa [Clinical case of Mallory-Weiss syndrome]. Modern science. 2020; 3: 322-324 (In Russ.).]

5. Timerbulatov Sh.V., Sagitov R.B., Yamalov R.A. Hirurgicheskaya taktika pri sindrome Mellori-Vejsa [Surgical tactics for Mallory-Weiss syndrome]. Vestnik Nacionalnogo mediko-hirurgicheskogo Centra im. N.I. Pirogova [Bulletin of the National Medical and Surgical Center named N.I. Pirogov. 2010; 5: 39-43 (In Russ.).]

7. Forrest J.A., Finlayson N.D., Sherman D.J. Endoscopy in gastrointestinal bleeding. Lancet. 1974; 2 (7887): 394-397.