



CONTEMPORARY PERSPECTIVES IN THE EARLY DIAGNOSIS AND TREATMENT OF MALLORY-WEISS SYNDROME.

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Article history:	Abstract:
<p>Received: August 14th 2024 Accepted: September 11th 2024</p>	<p>Management of bleeding in Mallory-Weiss syndrome (MWS) remains a pressing problem in emergency surgery. According to some authors, MWS makes up 15% or more of bleeding from the upper gastrointestinal tract. In 80% of cases, MWS develops against the background of chronic liver and kidney diseases, chronic alcoholism, stomach and duodenal ulcers, chronic pancreatitis [2,5,27,33].</p>

Keywords: Pulmonary Embolism; Clinical Observation; CT Diagnostics; Visualization.

RELEVANCE

Management of bleeding in Mallory-Weiss syndrome (MWS) remains a pressing problem in emergency surgery. According to some authors, MWS makes up 15% or more of bleeding from the upper gastrointestinal tract. In 80% of cases, MWS develops against the background of chronic liver and kidney diseases, chronic alcoholism, stomach and duodenal ulcers, chronic pancreatitis [2,5,27,33].

In this regard, surgical control of bleeding is accompanied by severe postoperative complications in the form of liver-kidney failure, alcoholic psychosis, and high mortality, ranging from 15 to 30%. [5,8,13,34]. In recent years, there has been a trend to treat this disease using endoscopic methods to stop bleeding. However, existing methods of endoscopic hemostasis do not completely guarantee against repeated bleeding, their frequency is from 5.6 to 30.6% [3,9,16,28,31]

Currently, the following treatment methods are available for Mallory-Weiss syndrome: Application (with the help of special glues, it protects the superficial mucous membranes of the esophagus), with the help of injection methods (based on the sclerosing of bleeding vessels with the help of special sclerosing solutions), with the help of physical effects (electrocoagulation, with the help of cold), with the help of mechanical effects (clipping and endoscopic suturing). [30,6,12,40]. Current methods Modern diagnosis of acute gastrointestinal bleeding in Mallory-Weiss syndrome causes significant difficulties, as specific clinical symptoms of the disease appear late. This may cause certain problems in early diagnosis and treatment [19,4,27,33].

Today, there are several views on the origin of Mallory-Weiss syndrome.

For example, Professor: Maksimenko S.A. (2020), the development of Mallory-Weiss syndrome in the development of Mallory-Weiss syndrome in acute and

chronic alcohol poisoning was studied [8,11,23,37]. As a result of consuming large amounts of alcohol or chronic consumption, the activity of the enzyme alcohol dehydrogenase in the liver decreases, and as a result, it has been studied that excessive consumption of alcohol causes intoxication of the body, and on the basis of this, it stimulates the development of nausea and vomiting [11,15, 31.53].

Although this theory is justified to a certain extent, information about other factors in the origin of Mallory-Weiss syndrome is very little and superficially indicated. This, in turn, creates many misunderstandings in the process of determining the origin of the disease. The clinical effectiveness of various methods of endoscopic hemostasis has been proven in the development of Mallory-Weiss syndrome against the background of acute and chronic alcohol poisoning. [1,7,17,51]. High clinical effectiveness of antisecretory drugs (H2 blockers and proton pump inhibitors and hepatoprotectors) has been shown for hemostasis and prevention of recurrent bleeding. [1,13,38,58].

A specific therapeutic and diagnostic algorithm for the treatment of patients with Mallory-Weiss syndrome is proposed based on the data of esophagogastroduodenoscopy and objective assessment of the severity of the patient's condition and multi-organ diseases. The effectiveness of hepatoprotectors and antitumor drugs that improve the trophic state of the esophagus and stomach has been proven. [6,10, 21,33].

Professor of the Association of Emergency Medicine of the Republic of South Korea: Pak Ch. (2022). He studied the effect of barotrauma on the occurrence of Mallory-Weiss syndrome [5,10,25,38]. In case of Mallory-Weiss syndrome, which is also caused by long-term breathing at high pressure with the help of an Ambu bag, the main reason why this syndrome occurs in patients is the body constitution of the patients. and gender, as well as the



inability to correctly assess the nature of the injury. Therefore, it is very important to correctly assess the patient's age, gender, body constitution, and injuries received in the first place when performing artificial respiration with the help of an Ambu bag in critically ill patients. According to Park Jeong, it was concluded that the duration of artificial respiration should not exceed 3 minutes in patients using an artificial respiration bag, and from time to time, breathing through the bag should be replaced by mouth-to-mouth or mouth-to-nose breathing. It has been studied that air conditioning as a result of long-term strong pressure in the opposite arm affects the barometric index of the esophagus, and as a result, Mallory-Weiss syndrome may occur as a result of esophageal bathotrauma. Professor: Danilin O.S. According to (2022) data, the main role in the pathogenesis of the disease is the dyscorrelation of the closing function of the esophageal-gastric sphincter, which leads to an increase in the internal pressure of the stomach. The pressure gradient in the stomach and esophagus is also important. In addition, developmental defects of the muscular layer of the gastric mucosa in the embryonic period are also of great importance in the development of this disease. [7,13,21,37].

Studies show that in the development of Mallory-Weiss syndrome, chronic gastritis, obvious atrophic changes in the mucous membrane due to gastric ulcer and dystrophic changes in the submucosal layer with varicose veins, perivascular necrosis and perivascular infiltration in the esophagus-stomach area are also of great importance. is enough. [25,10,23,47].

At the same time, the presence of organic changes in the liver and portal hypertension in liver cirrhosis is one of the decisive conditions for the emergence of Mallory-Weiss syndrome. [32,8,19,37]. Although these data fully described one factor in the occurrence of Mallory-Weiss syndrome, this process cannot fully reveal the pathogenesis of Mallory-Weiss syndrome. Because in this case, the occurrence of Mallory-Weiss syndrome creates unique difficulties in various clinical stages and treatment. [15,6,25,37].

Several Mallory-Weiss classifications are used worldwide.

For example, according to the classification of SH.V Temurbulatov, the levels of layer damage are divided as follows [2,10,23,47].

1st degree Rupture of the mucous membrane of the esophagus

Level 2 Rupture of the mucous and submucosal layers of the esophagus

Level 3 Rupture of the esophageal mucosa, submucosa, and muscle layers

4th degree: rupture of all layers of the esophagus
SH.V Temurbulatov also developed an improved classification of the Forrest classification for Mallory-Weiss syndrome (2019):

Type F1 is ongoing bleeding

F1a - arterial bleeding from a visible, visual source

F1b - cracks, diffuse capillary bleeding from the edges of cracks

F1c is a solid thrombus that bleeds beneath the thrombus at the base of the tear or at the edge of the tear(s)

F1d - heavy bleeding without the ability to localize or see the source of bleeding

F2 - bleeding type

F2a - a thrombosed vessel visible in the area of the bottom or edges of the crack

F2b - fixed thrombus in the fracture area without bleeding

F2c is the addition of hemosiderin in the areas of the cavity

F3 - type of rupture (s) (fissure) without signs of bleeding

F3a - cleaning of the bottom and edges of the crack with granulation elements

Despite the fact that it has been used for many years, the intensity of bleeding and the corresponding treatment algorithm have not been fully developed in clinical practice. This creates difficulties in correctly determining the tactics of treatment of the disease. [12,9,31,50].

When creating a classification in Mallory-Weiss syndrome, V.V. Rumyantsev paid great attention to the study of risk factors: he took into account the number of cracks, their location and depth, the level of blood loss, and two clinical forms - simple and delirious. [4,10,25,33].

For example, V.V. Classification 2020 proposed by Rumyantsev:

1. Characteristics of a crack in the mucous layer.

1. By quantity: one, many

2. Localization: esophagus, stomach, combination.

3. By depth: superficial, deep,

Amount of blood loss:

1. Lightweight.

2. Average.

3. Scream louder.

Clinical forms.

1. Simple.

2. Delirious.

A. No signs of liver failure.



B. With symptoms of liver failure.

Despite the fact that this classification has been used for a long time, clinical practice does not take into account disease levels and treatment algorithms specific to these levels. This creates problems in the diagnosis of the disease and the choice of treatment tactics.

According to Japanese surgeon Prof. Astuko Inagawa (2023), small-diameter endoscopes with a new self-assembling peptide matrix (PuraStat; 3-D Matrix, Tokyo, Japan) are currently used as hemostatic devices in medicine. -Much improved treatment of Weiss syndrome. [24,9,13,30]. Using endoscopic hemostatic special tubes with a small diameter of the peptide, it is considered a very effective method in Mallory-Weiss syndrome caused by esophageal stricture. Endoscopic hemostasis was confirmed by re-endoscopy 2 days after this treatment.

Although this method of treatment seems to be perfect at first glance, there is not enough information about the degree of Mallory-Weiss syndrome in which this procedure is performed in patients. This, in turn, creates difficulties in choosing treatment tactics for patients with different degrees of Mallory-Weiss syndrome. [16, 11, 23, 42].

Professor: Salmina N. N. (2020) developed a method for assessing the blood supply of the gastro-esophageal branch using duplex scanning of the left gastric artery and defined ultrasound criteria for assessing blood flow in healthy people. [9,12,25,40]. Dopplerographic signs of changes in blood flow in patients with Mallory-Weiss syndrome are presented. In addition, the relationship between the condition of the esophagus and gastric blood flow with the frequency of repeated bleeding was analyzed, prognostic criteria for the development of repeated bleeding in Mallory-Weiss syndrome were developed based on the ultrasound image of the cardio-esophagus. An algorithm for the management of patients with Mallory-Weiss syndrome at high risk of rebleeding was proposed for the first time based on changes in blood flow using B-mode duplex scanning. For the first time, according to the ultrasound data, the dependence of the blood flow of the esophagus and stomach on the length and location of the rupture, as well as on the hemostasis method used according to the endoscopic examination, was analyzed. Mallory-Weiss syndrome, according to ultrasound examination, is characterized by thickening of the esophagus wall; in 2-3 days after bleeding, an increase in the thickness of the stomach wall was observed, then in 6-8 days it approached the indicators of healthy people, and changes in the form of an increase in blood flow in the gastro-esophageal region were observed. A decrease in the peak systolic blood flow rate and the

resistance index of the left gastric artery was found, which later approached the values of healthy people for 6-8 days.

Despite the fact that a method of assessing the blood supply to the gastroesophageal branch using duplex scanning of the left gastric artery has been developed in these data, the causes of the origin and development of the disease in patients have not been fully studied. The functions of other blood vessels affecting the blood supply of the esophagus-stomach complex have not been fully studied. This makes it difficult for patients to choose the treatment tactics and, accordingly, the development of the disease.

Today, Chinese surgeon Yi Zhang China (2022) studied the development of Mallory-Weiss syndrome against the background of hyperkalemia caused by hemotransfusion. [13,15,25,38]. This complication is a rare but potentially life-threatening complication of red blood cell transfusions. It is worth noting that hyperkalemia caused by hemotransfusion is usually related to the volume, route and speed of erythrocyte transfusion, as well as the transfused unit itself, including storage time, hemolysis, and irradiated blood. Previous studies have shown that the majority of patients presenting with hyperkalemic cardiac arrest associated with hemotransfusion are hyperglycemic, hypocalcemic, hypothermic, and acidotic, which may exacerbate potassium cardiotoxicity. Therefore, he learned that before hemotransfusion, it is necessary to determine the amount of potassium in the patient's blood analysis and determine the amount of hemotransfusion based on its amount.

At first glance, this theory seems like an acceptable solution to prevent Mallory-Weiss syndrome after hemotransfusion, but there is not enough information about individual approaches in patients with age, body weight, and comorbidities. And this, in turn, the indications given in this article create specific difficulties in carrying out hemotransfusion in patients of different body weight, age and co-morbidities.

Professor: Solovyov A. S (2023) studied the effectiveness of the complex of endoscopic methods for diagnosis of the gastrointestinal tract from the digestive system using video information systems, the source, nature and activity of bleeding. [18,7,15,31].

The principles and features of emergency endoscopic examination using a video system in emergency surgery have been developed.

A large clinical material has shown the technical simplicity, safety and high efficiency of the endoscopic hemostasis complex in the treatment of patients with acute esophageal-gastric bleeding. [31,5,20,28].



Re-endoscopy has been shown to be necessary in patients with a high risk of recurrent bleeding.

A large clinical material has shown the technical simplicity, safety and high efficiency of the endoscopic hemostasis complex in the treatment of patients with acute esophageal-gastric bleeding. [21,9,23,38].

The introduction of a set of new endoscopic interventions into clinical practice has increased the quality and efficiency of diagnosis and treatment of esophageal-gastric bleeding from the upper part of the gastrointestinal tract. [14,7,15,31].

Implementation of active differential treatment and diagnostic tactics improved the quality of treatment of patients with Mallory-Weiss syndrome. [10,11,28,40].

The methodology of using new methods of endoscopic hemostasis is developed in detail depending on the location of the source of bleeding and its activity. It was determined which method or combination of methods should be used in a particular patient and in which cases endoscopic hemostasis is not appropriate.

The use of endoscopic hemostasis methods performed in the first hours of hospitalization in many patients allowed to avoid urgent operations at the height of bleeding and, if necessary, to carry out surgery in more comfortable conditions for the patient.

While these data show the effectiveness of endoscopic re-examination at different stages of bleeding in Mallory-Weiss syndrome, this article does not provide enough information about the origin, development and treatment algorithms of the disease. This, in turn, creates specific difficulties in making a clinical diagnosis of patients and treating them based on certain treatment algorithms. [17,8,29,34].

Currently, many methods and conservative and endoscopic surgical procedures have been developed for the treatment of Mallory-Weiss syndrome. Professor from Russia; Batkaev A. R. (2020.) studied the hemostatic effect of gelevin hydrogel in longitudinal rupture of the esophagus-stomach junction. [27,11,19,27]. A positive effect of hydrogel on the course of reparative processes in bleeding defects has been determined. Hydrophilic granular sorbents were used for the first time to prevent the development of bleeding in patients with Mallory-Weiss syndrome. According to Forrest, a differential approach to endoscopic hemostasis methods using gelevin was developed in the complex treatment of esophageal-gastric bleeding types IA-IB and IIA-IIB. [23,8,29,34]. Guidelines for the practical use of hydrophilic granular sorbent in the endoscopic treatment of Mallory-Weiss syndrome have been developed. The time of epithelization of defects in the mucous membrane of the

abdominal cavity esophagus, esophagus-gastric junction and gastric cardia was determined using different treatment methods. [29,5,18,29].

These data show that it is highly effective in mild cases of Mallory-Weiss syndrome (mucosa and submucosal damage). However, in these data, the methods of treatment in Mallory-Weiss syndrome, which occurs with ruptures of the esophagus-stomach junction up to the muscle layer or all layers of the esophagus-stomach junction, are not fully explained. This, in turn, makes it difficult to choose treatment methods in Mallory-Weiss syndrome, which is characterized by rupture of the esophagus-stomach junction.

Professor: Mukhammadzoda R (Tajikistan 2022.) In Mallory-Weiss syndrome, on the basis of large clinical materials, risk factors, nature of bleeding and characteristics of the clinical course of Mallory-Weiss syndrome were determined. [20,9,16,28].

For the first time, the state of regional hemodynamics in the basins of the left gastric artery and portal vein in Mallory-Weiss syndrome was studied against the background of complex therapy. studied the effectiveness of programmed endoscopic hemostasis in patients with Mallory-Weiss syndrome. suggested the use of the neuropeptide Sandostatin to achieve reliable hemostasis and prevent recurrent bleeding in patients with Mallory-Weiss syndrome. [26,5,17,25]. The efficiency of using the Tachocomb plate in suturing defects in the mucous membrane of the gastric cardia was studied. The expediency of using proton pump inhibitors and adhesive application tools to prevent recurrent bleeding in Mallory-Weiss syndrome has been studied.

Although special attention is paid to the issue of modern treatment approach, the etiology, pathogenesis and endoscopic surgery issues of Mallory-Weiss syndrome are not fully covered. [26,6,19,30]. This, in turn, creates difficulties for the attending surgeon in choosing treatment tactics and managing the treatment of the disease.

All of the above testifies to the great scientific and practical importance of this problem, which requires conducting deep, comprehensive scientific research and developing optimal methods of treatment.

Various controversial cases, classifications and treatment methods in the origin and pathogenesis of the above disease, although they fully reflect the Mallory-Weiss process, the relevance of the problem of Mallory-Weiss syndrome remains important despite the advances in modern medicine. Despite many achievements in the treatment of Mallory-Weiss in modern medicine, many unsolved tasks remain. The



issues of early detection of this pathology, development of more effective methods of treatment and introduction into surgical practice remain urgent. To date, a special classification based on the degree of damage in Mallory-Weiss syndrome and a treatment algorithm based on this classification has not been developed.

In conclusion, timely detection and treatment of bleeding in Mallory-Weiss syndrome remains relevant. However, the lack of early diagnostic methods and the lack of clear instructions for minimally invasive treatment are the reasons for the complicated course of this pathology. It is known to everyone that timely diagnosis of the disease and providing early emergency care increases the quality of treatment. Accordingly, in our opinion, there are insufficient classifications of Mallory-Weiss syndrome, and those that exist require improvement. We think that it is time to develop endoscopic measures after fully studying the stages of bleeding in Mallory-Weiss syndrome and the limits of damage. The most serious disadvantage of the Blackmore probe, which is used in all esophageal bleedings, is that it compresses the respiratory system and the thoracic cavity under pressure, which requires urgent care for the patient.

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