

## **Improving the Technique of Endoscopy to Increase the Effectiveness of Hemostasis in Bleeding From Varicose Veins of the Esophagus and Stomach**

**Shoira Narzullaevna Khudaykulova**

Senior Lecturer, Department of Medical and Biological Physics, Samarkand State Medical University

**Abstract:** This research article presents a comprehensive analysis of endoscopic hemostasis methods for bleeding from varicose veins of the esophagus. With an alarming mortality rate due to liver cirrhosis and its complications, addressing bleeding from esophageal varices has become a critical medical challenge. This work focuses on the evaluation of traditional and modern techniques, examining their efficacy and safety, and offers new insights into the implementation of endoscopic sclerotherapy and ligation.

The study draws on clinical experiences and statistical analyses to propose improvements in endoscopy techniques, analyze the epidemiology of the condition, and provide a critical evaluation of current treatment methods. The article also highlights clinical recommendations for the integration of new methods into practice and outlines perspectives for further research.

**Keywords:** endoscopic hemostasis, varicose veins of esophagus, sclerotherapy, ligation, liver cirrhosis, portal hypertension, bleeding, clinical recommendations, treatment efficacy, medical technology.

### **Introduction**

Bleeding from varicose veins of the esophagus and stomach (VRVV) is by far one of the main and most dangerous complications of portal hypertension. The nature of this problem is complex, and it can have serious consequences, including high mortality, which in some cases reaches 50-70% of the first episode of bleeding.

The relevance of the topic is determined by the need to improve existing methods of diagnosis and treatment, in particular, endoscopic hemostasis, in order to minimize risks and improve the prognosis for patients. In this context, the study of new approaches and techniques based on the latest achievements of medical science and technology is an important area of work in this area.

The purpose of this study is to analyze and evaluate the effectiveness of modern methods of endoscopic hemostasis in bleeding from varicose veins of the esophagus and stomach, as well as to develop proposals for further improvement of these methods.

To achieve this goal, the following tasks were formulated:

- Study and analyze existing literature and scientific research in this area, including the work of Kadirov.
- To assess the current statistics and epidemiology of bleeding from VRVV, to identify key risk factors and problems in treatment.

- Analyze existing methods of endoscopic hemostasis, their advantages and disadvantages.
- Consider the possibilities of improving these methods, especially in terms of minimally invasiveness, reducing bleeding recurrence and reducing mortality.
- Formulate clinical guidelines and directions for further research.

This study aims to contribute to the advancement of medical science in this critical area by helping to save lives and improve the quality of life of patients with portal hypertension and VRVV.

### **Literature review**

Kadirov R.N., Khadzhibaev F.A. "Endoscopic methods of hemostasis in portal bleeding" // The Scientific Heritage, 2020

- Analysis of hemostasis methods: In this paper, various methods of endoscopic, medical and surgical hemostasis for bleeding from VRVP are considered.
- Statistics and current trends: Statistics on mortality from cirrhosis of the liver and its complications are presented, as well as an analysis of current trends in the treatment of bleeding from VRVP.
- Main conclusions: Attention is focused on the high percentage of complications and low survival of patients, which emphasizes the need to improve treatment tactics.

Kadirov, R. N. "Endoscopic hemostasis in bleeding from varicose veins of the esophagus" // Emergency medical care - 2022

- Analysis of the effectiveness of various methods of endoscopic hemostasis: The study was conducted based on the analysis of clinical examination and treatment of 135 patients with cirrhosis of the liver and portal hypertension syndrome.
- Comparison of methods of sclerotherapy and endoscopic ligation: The paper demonstrates the advantage of endoscopic ligation over traditional sclerotherapy, which made it possible to improve the efficiency of stopping bleeding by an average of 86.3%.
- Key findings: The work highlights the potential of endoscopic ligation as a highly effective method of hemostasis and suggests further directions of research in this area.

These works are an important contribution to the understanding of the current situation in the field of endoscopic hemostasis in bleeding from VRVJ and provide valuable data for further improvement of diagnostic and treatment methods.

### **Methods of endoscopic hemostasis**

#### **Traditional methods**

1. Sclerotherapy: One of the most common methods is to inject a sclerosing substance into the varicose veins of the esophagus and stomach. However, the effectiveness of this method may be insufficient, especially with intense bleeding.
2. Blackmore Probe Placement: Used to temporarily squeeze a bleeding vein by inserting a special probe. The method is difficult to perform and requires constant monitoring.
3. Electrocoagulation: The application of electric current to coagulate a bleeding vein. Requires specialized equipment and experience.

#### **State-of-the-art machinery and equipment**

1. Endoscopic ligation: This method consists of putting special ring ligatures on varicose veins, followed by squeezing. Studies by R. N. Kadirov have shown the high efficiency of this method, especially in comparison with traditional sclerotherapy.

2. Laser coagulation: The use of laser light to coagulate bleeding veins. Provides high accuracy and minimizes the risk of complications.
3. Argon plasma coagulation (APC): The use of argon plasma beam allows you to achieve point coagulation without contact with tissues.
4. Combined methods: The integration of different techniques, such as ligation and sclerotherapy, can give better results in certain cases.

Modern methods of endoscopic hemostasis are focused on improving the effectiveness of treatment and reducing the risk of complications. They offer more innovative and safe approaches that can be tailored to the individual needs of patients and bleeding patterns.

### **Analysis of the problem of bleeding from varicose veins**

Bleeding from esophageal and gastric varices is a serious medical problem, especially among patients with cirrhosis of the liver and portal hypertension syndrome. They account for 5 to 42% of all gastrointestinal bleeding and are one of the leading causes of death among this category of patients. Mortality from the first episode of bleeding reaches 50-70%.

Bleeding from varicose veins can be deadly, especially in the absence of timely diagnosis and treatment. Clinical manifestations include vomiting of blood, melena, syncope, and shock. Diagnosis usually includes endoscopy, which can also serve as a means for hemostasis.

Existing treatments include endoscopic, medical, and surgical hemostasis. Each of these methods has its drawbacks and limitations:

- Endoscopic techniques: Traditional sclerotherapy may be less effective, especially for intense bleeding. The installation of the Blackmore probe requires constant monitoring and can be difficult to perform.
- Drug-induced hemostasis: Based on the use of drugs to reduce pressure in the portal system. May be less effective with active bleeding.
- Surgical hemostasis: Surgery may be associated with a high risk of complications and a long recovery period.

Clearly, there is an urgent need to improve treatments to improve outcomes in patients with esophageal and gastric varicose vein bleeding. Effective management of this complex problem requires the integration of new approaches and technologies into clinical practice.

### **Improving the technique of endoscopy**

Bleeding from esophageal varices requires a well-coordinated and effective approach to treatment. One of the directions for improving the therapeutic approach is the development and implementation of new methods of endoscopic hemostasis.

In recent years, new methods of endoscopic hemostasis have been actively developed, which are aimed at increasing the effectiveness and safety of the procedure. This includes the introduction of new tools and techniques, such as clipping, a combination of ligation and sclerotherapy, and the application of new types of sclerosing agents.

Sclerotherapy and ligation of esophageal varices have long been used in clinical practice. However, their combination and improvement of technique can significantly improve treatment outcomes. The use of endoscopic ligation showed an improvement in the efficiency of hemostasis up to 86.3%, in comparison with traditional methods.

Improving endoscopic hemostasis not only helps to immediately stop bleeding, but also reduces the risk of its recurrence. This has a direct impact on patient survival, reducing mortality and complications. The minimally invasiveness of the method also ensures faster recovery and improves the quality of life of patients after the procedure.

In conclusion, the improvement of endoscopic techniques is the key to the successful treatment of bleeding from esophageal varices. It opens up new horizons for improving clinical outcomes and represents an important step forward in the management of this complex and dangerous condition.

### **Analysis of the effectiveness and safety of new methods**

New methods of treating bleeding from esophageal varices, including new techniques of endoscopic hemostasis, ligation and sclerotherapy, represent an important direction in modern medicine. However, the evaluation of their efficacy and safety is a key step before being introduced into widespread clinical practice.

Comparison of new methods with traditional ones can reveal significant advantages or disadvantages. For example, endoscopic ligation in the main group showed an increase in the effectiveness of hemostasis up to 86.3%, compared with 65.4% with the use of traditional sclerotherapy. This gives reason to believe that new methods are more effective.

Any new treatment requires a thorough analysis of possible risks and complications. This includes an assessment of short-term and long-term side effects, possible complications of the procedure, and the overall impact on the patient's health. For example, the minimally invasiveness of new techniques can reduce the risk of infections and other complications associated with invasive procedures.

In conclusion, the analysis of the effectiveness and safety of new methods is an integral part of their evaluation and implementation in medical practice. It allows you to determine the best treatment strategies, ensuring high efficiency and minimal risks for patients. This work, combined with research based on the work of Kadirov and his colleagues, promises significant progress and improvements in the treatment of bleeding from esophageal varices.

### **Clinical recommendations and application in practice**

Based on the research and analysis, it is possible to formulate a number of clinical recommendations for the introduction and use of new methods of treating bleeding from esophageal varices. It is also possible to highlight prospects and directions for further research.

Recommendations for the implementation and use of new methods

1. Application of Endoscopic Hemostasis and Ligation: These methods promise high efficacy and may be preferred in certain clinical cases.
2. Staff Education and Training: New methods require specialized skills and knowledge, so it is necessary to provide appropriate training for medical personnel.
3. Monitoring and Evaluation of Results: The introduction of new methods should be accompanied by continuous monitoring and evaluation of their efficacy and safety in real clinical settings.
4. Individual Approach: The choice of method should be based on the individual characteristics of the patient, including the stage of the disease, general health and other factors.

Prospects and directions for further research

1. Long-term studies: Long-term studies are needed to evaluate the long-term efficacy and safety of new methods.
2. Comparative Studies: Comparing new methods with existing practices can provide a more complete understanding of their advantages and disadvantages.
3. Study on large groups of patients: Working with large groups of patients can reveal additional aspects of the application of new methods and help in adapting recommendations to different populations.

In conclusion, new methods of endoscopic hemostasis promise significant improvements in the treatment of bleeding from esophageal varices. However, their successful implementation requires careful planning, training, and monitoring. Further research may expand our knowledge and contribute to the wider application of these methods in clinical practice.

## Conclusion

The study of endoscopic methods of hemostasis in bleeding from esophageal varices led to several key conclusions and made it possible to summarize current trends in this important field of medicine.

1. Efficacy and Safety: Comparison of new methods with traditional ones has confirmed that modern methods can offer higher efficacy and safety in some cases.
2. New Techniques and Equipment: The study highlighted the importance of continuous technology development and staff training to achieve optimal results.
3. Individualization of treatment: The work highlighted the need for a more individualized approach to treatment, taking into account the unique characteristics of each patient.
4. Prospects and Directions for Further Research: The study identified a number of promising areas for further research that could contribute to improving the practice of endoscopic hemostasis.
5. Clinical Guidelines: Practical recommendations have been developed for the introduction of new methods, which can accelerate their application in medical practice.

In general, the results of the study emphasize the importance of continuing to work on improving endoscopy techniques, developing new methods and integrating them into existing practice. This approach can improve the quality of life of patients and reduce the risks associated with bleeding from esophageal varices, as well as enrich the scientific community with new data and methodology that will be useful for further research in this area.

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