

## EVALUATION OF THE EFFICIENCY OF ENDOSCOPIC LIGATION IN PATIENTS WITH PORTAL HYPERTENSION SYNDROME COMPLICATED BY BLEEDING FROM ESOPHAGUS AND GASTROUS VARICOSE VEINS

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**Abstract.** *The data of examination and treatment of 54 patients with bleeding from varicose esophagus and gastrous against the background of cirrhosis of the liver, who were treated at the 2nd clinic of the Tashkent Medical Academy for the period 2010-2022, who underwent endoscopic interventions, were analyzed. The aim of the research was to study the effectiveness of endoscopic ligation in patients with portal hypertension syndrome complicated by bleeding from varicose veins of the esophagus and gastrous. A positive effect was observed in 83.3% of patients. It was also found that endoscopic ligation varicose veins of the esophagus and gastrous reduces the risk of bleeding from varicose veins of the esophagus and gastrous to 3.8%. The results obtained indicate the effectiveness of endoscopic ligation in patients with portal hypertension syndrome complicated by bleeding from varicose veins of the esophagus and gastrous.*

**Keywords:** *liver cirrhosis, portal hypertension, varicose veins, ligation, stages.*

### Relevance

The relevance and social significance of any disease is determined by two main factors - the prevalence among the population and the degree of danger of the pathological condition for human life and health. The need for a deeper study and discussion of a specific problem depends on how the current level of medicine allows you to protect the patient from the developed threat to his health [1, 7].

Recently, in our country, there has been an increase in the incidence of liver cirrhosis (LC), which is the main cause of the development of portal hypertension (PH) [2, 8]. It should be considered as an important link in the pathogenesis of hemodynamic disorders, leading to significant changes in blood circulation in the portal vein system and the development of portosystemic anastomoses [3–5, 9].

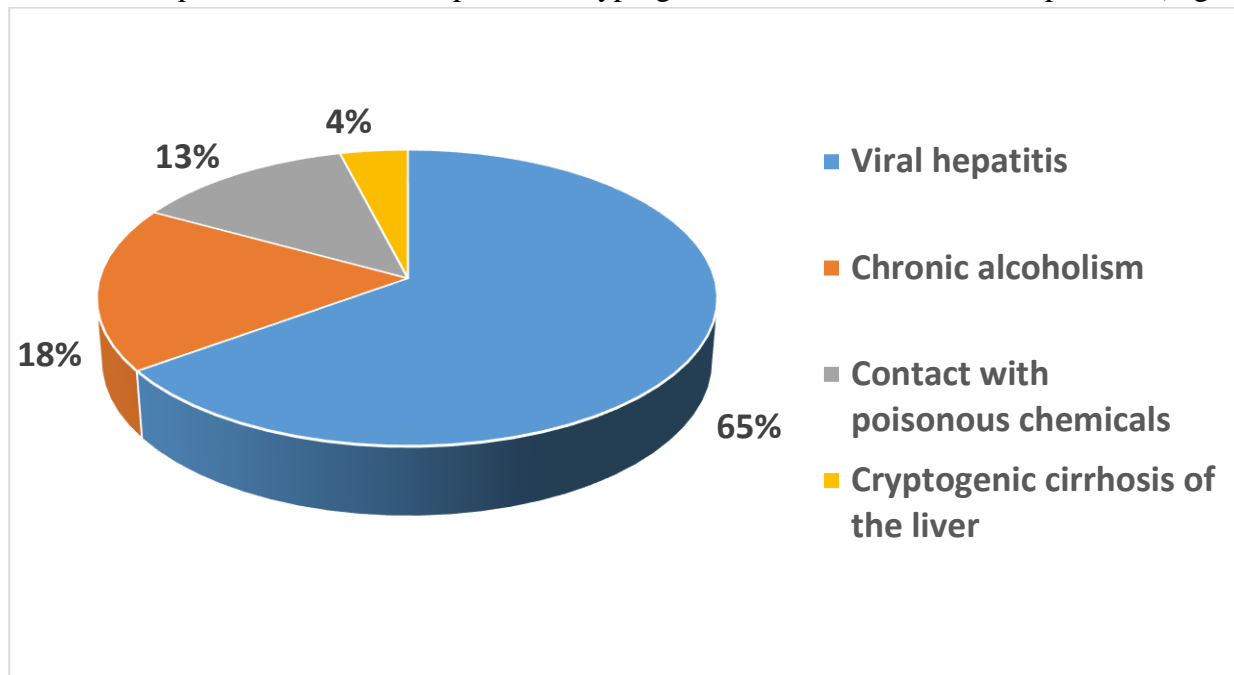
The issues of PH treatment remain the most complex and debatable for decades due to the complexity of this problem [6, 7, 10, 11], the emergence of new technologies and the unresolved problems currently proposed for researchers.

**The aim of the study** was to study the effectiveness of endoscopic ligation in patients with portal hypertension syndrome complicated by bleeding from esophagus and gastrous varicose veins (EGVV).

**Materials and research methods.**

The data of examination and treatment of 54 patients with bleeding from EGVV against the background of cirrhosis of the liver, who were treated at the 2nd clinic of the Tashkent Medical Academy for the period 2010-2022, who underwent endoscopic interventions, were analyzed.

The most common etiological factor of liver cirrhosis was viral hepatitis (B, C, D), which accounted for 65% of the total number of patients, chronic alcoholism - 18% of patients, contact with pesticides in 13% of patients, cryptogenic liver cirrhosis in 4% of patients (Fig. 1)



The duration of the disease in most patients (71.2%) ranged from 3 to 7 years. Moreover, in 20% of patients, cirrhosis of the liver was detected less than a year after hepatitis, mainly among those suffering from viral hepatitis.

When assessing the severity of PH and the localization of the portohepatic circulation block, the generally accepted classification of Patsiora M.D. [9] (Table 2.). At the same time, the main part (37%) of patients was in the stage of PH subcompensation .

Both in the main and in the control groups, the main cause of PH was intrahepatic block (liver cirrhosis), mixed (partial portal vein thrombosis and liver cirrhosis) occurred only in the main group in 1.1% of patients.

**Table 1**

**Distribution of patients according to the stage of portal hypertension syndrome**

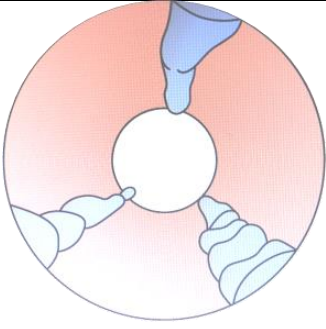

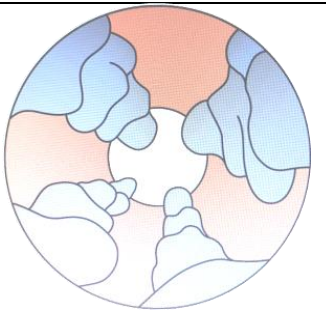

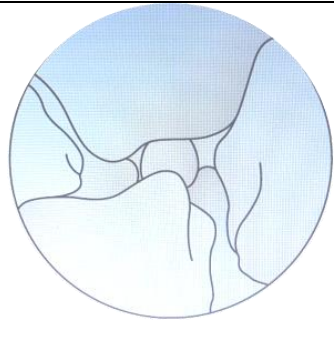

Stage of portal hypertension	Control group	Main group
Compensated stage	3	4
Subcompensated stage	8	eleven
Decompensated stage	12	16
Total	23	31

It should be noted that all the examined patients had previously suffered esophageal and gastric varicose bleeding, and in 18 (14%) - repeatedly.

To assess the severity of hepatocellular insufficiency in cirrhosis, the Child - Pugh classification was used .

The complex of examination of patients included clinical, biochemical, instrumental and radiological studies. Based on their data, a diagnosis was made, the course of the disease was monitored, and the results of treatment were evaluated.

Endoscopic examination made it possible to determine the source of bleeding, the presence of varicose veins, their diameter and the length of submucosal vessels, which made it possible to assess the degree of their expansion according to the classification of *N. Soehendra , K. Binmoeller (Table 2)* .

	
<p>1 - the diameter of the veins does not exceed 5 mm, they are elongated, located only in the lower third of the esophagus.</p>	
	
<p>Grade 2 - the diameter of the veins is 5-10 mm, convoluted, distributed in the middle third of the esophagus.</p>	
	
<p>Grade 3 - the size of the veins is more than 10 mm, tense, with a thin wall, located close to each other, on the surface of the veins "red markers"</p>	

*Fig. 2. Classification of varicose veins of the esophagus  
 (N. Soehendra, K. Binmoeller)*

**Ultrasonography** was carried out not only to confirm the diagnosis, but also to determine the size and position of the liver, the state of the parenchyma of the organ, the diameter of the intrahepatic vessels of the portal system and their position, the localization of the gate of the liver, the position of the gallbladder and the inferior vena cava. In addition, the presence of space-occupying formations in the right lobe of the liver was revealed along the proposed puncture, intestinal interposition, which is a contraindication for transhepatic interventions.

### **Results and discussions**

The results of treatment of 54 patients with cirrhosis of the liver, complicated by portal hypertension and bleeding from EGVV, were analyzed for 2010-2022, who were hospitalized at the clinics of the Tashkent Medical Academy. The mean age of the patients was  $42.3 \pm 1.1$  years. Among the patients, male patients predominated - 21. In all cases, PH had the character of an intrahepatic block, i.e. cirrhosis, the cause of which in 93% of cases was a viral infection and 7% of cases - the association of alcoholic and viral hepatitis.

All patients, depending on the method of treatment, were divided into 2 groups: I - control group (n = 23) and II - main (n = 31). In contrast to the control group, the main group included 31 patients who, along with conservative therapy, underwent endoscopic interventions in a planned manner.

On the material of the control group, consisting of 23 patients who underwent traditional conservative therapy, an analysis of the course of the disease was carried out, the frequency and timing of the development of complications were determined, life expectancy and the causes of deaths were identified.

The main group (31 patients) included patients who underwent endoscopic interventions both on an emergency basis and for delayed indications based on the developed methods and treatment algorithm.

EL EGVV for emergency indications was performed in 31 patients: 18 - on an emergency basis, 13 - in a delayed manner after stopping bleeding with a Sengstaken-Blackmore probe. Performing EL in emergency cases with ongoing bleeding without prior achievement of temporary hemostasis with a Sengstein-Blackmore obturator probe in most cases was performed at the height of bleeding.

Saeed multicharger from Wilson - Cook (USA) and HMM -7 (Korea). EL courses were performed at intervals of 1 to 6 months. If during visual endoscopic examination after a series of ligation courses EVV was not defined or assessed as grade I, then the endoscopic treatment was considered effective and the patient was followed up every 3 months. The duration of the general treatment took from 6 to 12 months, the observation period was 24 months.

EL was performed on an empty stomach using a Wilson -Cook Medicine 6- or 10-ring device. After preliminary endoscopy, the nozzle with ligating latex rings was adjusted to the distal end of the gastroscope. Ligation was started after passing through the cardiac annulus from the region of the cardioesophageal junction, continuing higher in a checkerboard pattern in a spiral . To capture varicose veins, a vacuum inside the cylinder was created using medical suction. At the same time, after tightening the varicose vein inside the cylinder, latex rings were lowered from its outer side to the base of the varicose vein. EL with active bleeding was performed with the capture of a bleeding vessel or below the site of bleeding.

Taking into account that EL was carried out with the help of multiply charged ligators, in one session, "circular" doping of all varicose veins of the esophagus was performed, starting from

the level of the esophageal-gastric junction. Re-ligation if necessary varicose veins was carried out in a month.

An important indicator of the safety of endoscopic intervention is the frequency of complications and side effects. We studied the incidence of side effects in EL. The most common side effects were retrosternal pain, transient dysphagia, and transient hyperthermia. Pain syndrome and dysphagia gradually decreased on their own 4-5 days after ligation. The appearance of hyperthermia was more associated with the prolonged presence of the obturator probe, which caused bedsores and inflammation of the esophageal mucosa in 3 (8.1%) patients. This circumstance also complicated the adequate ligation of the EGVV. On the other hand, a pronounced inflammatory process around the ligated areas causes systemic hyperthermia. The absorption of blood masses in the intestine also causes a rise in temperature and the progression of liver failure. In these situations, we considered it necessary to prescribe broad-spectrum antibacterial drugs. The average number of EL courses per patient for 2 years was  $3.4 \pm 0.3$ .

2 patients had recurrent bleeding. In all cases, the recurrence was due to slippage of the ligatures on the 2nd and 3rd day after their application. In order to stop bleeding in these patients, obturation was applied. lumen of the esophagus with a Blackmore probe followed by repeated endoscopic ligation in 3 cases.

Thus, in patients with cirrhosis, the isolated use of endovascular techniques (embolization of the left gastric vein, embolization of the splenic artery) is characterized by a low 2-year survival rate of 38.1%, which is due to frequent anatomical and technical difficulties of implementation - up to 54.3%, unstable primary hemostasis - 30.8%, high incidence of recurrence of bleeding from EGVV - 52.2% with a risk of mortality - 32.6%.

#### **Conclusion:**

1. The use of endoscopic ligation in acute esophageal-gastric bleeding of portal origin allows to stop bleeding in 68.6 - 83.3% of cases, increase the two-year survival rate of patients up to 58.7% compared with patients who received transhepatic intervention.

2. At the same time, the most important prognostic factors influencing the survival of patients with portal bleeding are their belonging to the functional class according to Child - Pugh and the development of recurrent bleeding. The main factor associated with the development of recurrence of varicose bleeding after the program of endoscopic treatment is the lack of achievement of endoscopic eradication of varicose veins of the cardia of the gastrous, which in our observations after EL was 20.2%.

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