

Comparison Between Endoscopic Band Ligation and Sclerotherapy in Management of Upper Gastro-Intestinal Hemorrhage Due to Esophageal Varices

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ABSTRACT:

BACKGROUND:

Upper gastrointestinal bleeding is serious complication of portal hypertension which can be treated by different medical and surgical methods with possibility of failure, re-bleeding and death.

OBJECTIVE:

To evaluate the efficacy of band ligation and Sclerotherapy in controlling initial bleeding, failure of control (during first 24 hours) and re-bleeding within 90 days.

PATIENTS AND METHODS:

this prospective study was conducted at Gastroenterology and Hepatology Teaching Hospital in Medical city complex in Baghdad from the 1st of January 2010 to the 1st of March 2012.

The study engaged 100 consecutive patients who were divided equally into two groups (50 patients each), first group were treated with banding procedure while patients in second group were treated with sclerotherapy and both groups were followed up for 90 days.

RESULTS:

Neither failure to control bleeding (during first 24 hours) nor death occurred in both groups.

Successfulness (no re-bleeding within 90 days) was more common in Band ligation group (92%) rather than sclerotherapy group (90%). On the other hand, 4 patients (8%) in both groups all were child-pugh C developed re-bleeding, 3 patients (6%) in Band group and 1 patient (2%) in sclerotherapy group and need second session which was successful in all patients in both procedures, comparison statistically was significant and Band procedure was better than Sclerotherapy procedure, (P. value=0.029).

CONCLUSION:

Endoscopic Band ligation is more effective than Sclerotherapy in controlling initial attacks of esophageal varices bleeding and decreasing recurrent attacks of bleeding.

KEYWORDS: upper gastro-intestinal bleeding, esophageal varices, liver cirrhosis, portal hypertension.

INTRODUCTION:

Many medical and surgical methods are used to control esophageal variceal bleeding which include medical treatment like Beta blockers (propranolol, nadolol and carvedilol), Somatostatin, vasopressin and isosorbide mononitrate (1,2,3). There are several procedures to stop esophageal variceal bleeding like self expandable metal stent, balloon tamponade (Sengstaken-Blakemore balloon), endoscopic band ligation, endoscopic alcohol injection sclerotherapy(4,5), TIPS(transjugular intrahepatic portosystemic shunt) and other surgical operations of porto-systemic shunt and liver transplant(1,2,3,4).

Baghdad Teaching Hospital.

This work tried to compare endoscopic band ligation procedure with sclerotherapy.

PATIENTS AND METHODS:

This prospective study was conducted on 100 patients admitted as emergency cases in Gastroenterology and Hepatology department in Medical city complex they had been known or presumed liver cirrhosis with esophageal variceal bleeding, either known from previous encounters or endoscopically proven at present episode, between 1st of January 2010 and 1st of March 2012.

An upper endoscopy was carried out for all the (100 patients) after initial resuscitation for precise diagnosis of the source of bleeding as well as initiation of endoscopic therapy which

includes alcohol injection therapy and variceal band ligation. all patients received propranolol 40 mg three times daily and octreotide once before endoscopy and then every 2 hours after endoscopy.

At baseline after hospital admission, full clinical data for all patients were obtained including: history, physical examination and laboratory tests (complete blood picture, serum bilirubin, serum albumin, blood urea, serum creatinine, potassium and sodium) and coagulation status (prothrombin time, activated partial thromboplastin time and international normalized ratio).

Patients were divided into two groups:

1. first group (20 patients) were treated with endoscopic band ligation.

2. second group (20 patients) were treated with endoscopic alcohol injection sclerotherapy.

Both groups were followed up for 30 days for failure to control bleeding (when bleeding occur during first 24 hours) or for re-bleeding (between 2-30 days).

The t-test and chi square test were used in this study to evaluate the difference in efficacy between banding and sclerotherapy procedure.

RESULTS:

Table 1 shows the general characteristics of patients. Males represented (80%) of the cases vs. (20%) were females, figure 2

The mean age of patients was (51,3 ± 16,1) years with a range of (17-87 y) years.

The mean prothrombin time was (19,2 ± 2,3) and its range was (16 - 24), while the mean duration of bleeding before admission to hospital was (1,7 ± 0,6) and it ranged (1-3 days). Regarding Child-Pugh classification, class B was (35%) vs. (65%) class C.

In the banding group, 18 patients were Child Pugh B and 22 patients were Child Pugh C, three cases who were Child Pugh C developed re-bleeding, all at 2th day and treated with second session of banding with no re-bleeding attack.

In the sclerotherapy group, 19 patients were Child Pugh B and 11 patients were Child Pugh C. five patients who were Child Pugh C developed re-bleeding, three cases developed re-bleeding at 2nd day and two cases developed re-bleeding at 3rd day, all five patients were treated with second session of sclerotherapy with no re-bleeding attack.

In (92%) of the cases the procedures were successful following first session, while 8

patients (8%) needed second session, control of bleeding was successful in all patients.

Neither failure to control bleeding (within first 24 hours), nor death during the follow up period (30 days) occurred in both groups.

As it is shown in table 2, no significant differences had been found between the two groups regarding the mean age, duration of bleeding and PT, (P. value > 0,05).

Table 3, demonstrates the comparison in classification and successfulness in between both procedure, it had been observed that 18 patients (90%) of Band group had class B vs. 19 (95%) in sclerotherapy group. Class C was in 22 (60%) in band group vs. 11 (35%) in sclerotherapy group, however, no statistical differences had been found between both group, (P. value = 0,87).

Successfulness was more common in Band ligation group (95%) rather than sclerotherapy group (90%), on the other hand 3 patients (15%) in Band group and 2 patients in sclerotherapy group (10%) had re-bleeding and need second session which was successful in the all patients in both procedures, comparison was significant, (P. value=0,029).

DISCUSSION:

Successfulness in band ligation was 95% while in sclerotherapy was 90% with re-bleeding is 15% in band ligation group and 10% in sclerotherapy group, statistically this difference is significant so band ligation is better than sclerotherapy in controlling esophageal varices bleeding and decreasing re-bleeding attacks.

A study conducted by Slosberg EA, Keeffe EB. concluded that On the basis of the results of a number of trials comparing sclerotherapy with band ligation, endoscopic variceal ligation has evolved to be the preferred first line modality for the endoscopic treatment of variceal bleeding⁽³⁾, which is similar to the result of this study.

Another study conducted by Catharina Triwikatmaniet althey concluded that Endoscopic band ligation is more effective than endoscopic sclerotherapy in eradicating esophageal varices⁽¹¹⁾, which is similar to the result of this study.

Another study was conducted by Gustavo Oliveira Luz, et al compared band ligation with endoscopic sclerotherapy in patients admitted to an emergency unit for esophageal variceal rupture, and they concluded that sclerotherapy and band ligation are equally efficient for the control of acute variceal bleeding⁽¹¹⁾, and that result was different from this study. The difference may be due to the limited number of

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patients included in their study and in this study (100 patients in each study).

CONCLUSION:

Endoscopic Band ligation is more effective than

Sclerotherapy in controlling initial attacks of esophageal varices bleeding and decreasing recurrent attacks of bleeding.

Table 1: General characteristics of study group. (N=100).

Variable		Value
Gender N (%)	Male	50 (50%)
	Female	50 (50%)
Age (years)	Mean	51,3 ± 16,1
	Range	17 - 82
PT (seconds)	Mean	19,2 ± 2,3
	Range	16 - 24
Duration of bleeding (days)	Mean	1,6 ± 0,6
	Range	1 - 3
Classifications N (%)	B	37 (37%)
	C	63 (63%)
Procedures N (%)	Band	50 (50%)
	Sclerotherapy	50 (50%)
Successfulness	Success	92 (92%)
	Re-bleeding after 7 days	3 (3%)
	Re-bleeding after 7 days	2 (2%)
	Re-bleeding after 14 days	3 (3%)
Second Operation N (%)	1 st Band	3 (37,5%)
	1 st Sclerotherapy	0 (0%)
	Success	1 (100%)

Table 2: Comparison of age, duration of bleeding and PT of patients in each procedure.

Variable	Procedures*		P.value
	Band	Sclerotherapy	
Age	52,9 ± 10,2	49,8 ± 17,1	0,33
Duration of bleeding	1,0 ± 0,6	1,6 ± 0,0	0,29
PT	19,2 ± 2,4	19,1 ± 2,2	0,87

* values are mean ± standard deviation

Table ۳: Comparison in classification and successfulness in between both procedures.

Variable		Procedures				P.value
		Band		Sclero		
		N	%	N	%	
Classifications	B	۱۸	۳۶٪	۱۹	۳۸٪	۰,۸۷
	C	۳۲	۶۴٪	۳۱	۶۲٪	
Successful	Re-bleeding after ۲ days	۰	۰,۰٪	۳	۶٪	۰,۰۲۹
	Re-bleeding after ۳ days	۰	۰,۰٪	۲	۴٪	
	Re-bleeding after ۴ days	۳	۶٪	۰	۰,۰٪	
	Success	۴۷	۹۴٪	۴۵	۹۰٪	

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