

Endoscopic Banding Ligation for Bleeding Esophageal Varices by using Hemorrhoid Rubber Band ; Personal Experience

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ABSTRACT

- Background** : Endoscopic Banding Ligation (EBL) is now accepted to be the treatment of choice for bleeding esophageal varices, because it's more effective, easier and fewer complication than other treatments. Because the kit set for EBL is very expensive (1,000 Bht./1banding) and the set is single use. So we try to use hemorrhoid rubber band for reloading the useless kit set and found that hemorrhoid rubber band was effective to control bleeding and less expensive (8Bht/1banding). Before we use hemorrhoid rubber to treat the patients, we have tested these rubbers and original rubbers physically including elasticity and the result are closely equal.
- Objective** : To study result of reloaded Endoscopic Banding Ligation (EBL) use hemorrhoid rubber band in patients with bleeding esophageal varices at Surin Hospital from January 1999 - December 2001
- Setting** : Department of Surgery, Surin Hospital
- Research Design** : Prospective descriptive study
- Method** : Bleeding varices patients treated with reloaded EBL were follow up monthly.
- Results** : In this study we report 43 patients with bleeding esophageal varices treated by EBL with reloaded hemorrhoid rubber band. During this study, 6/43 patients (13.5%) died of different causes, 5/43 patients (11.6%) rebled within 30 days without major complication, 5/43 (11.6%) had minor complications (fever, retrosternal chest pain, dysphagia and sore throat).
- Conclusion** : We conclude that reloaded hemorrhoid rubber band is safe and effective enough for treating bleeding esophageal varices. We also introduce the easy technique to reload hemorrhoid rubber band to "SURIN HOSPITAL TECHNIQUE"

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Introduction

Bleeding esophageal varices account for up to 30% of patients with major upper gastro-esophageal hemorrhage⁽¹⁾ and are associated with mortality rate of 15-40%. In Thailand, esophageal varices was the cause of hemorrhage for 44.2-50% of patients.^(2,3) There are many types of treatment to stop and prevent recurrent bleeding. Endoscopic banding ligation is the new and more effective than endoscopic injection sclerotherapy.^(4,5,6) However, the set to EBL is very expensive and single use. So reloading technique to reuse useless kit was created; Rattanachu-ek⁽⁷⁾ reported technique to reload and the preliminary result of patients treated with hemorrhoid rubber band. In Surin hospital, we also created reloading another unique technique immitate the original set. The objective of this study is to report the personal experience for the outcome of reloading hemorrhoid rubber band in aspect of safety, risk benefit and cost effectiveness.

Material and Method

During 24 months period from January 1999-December 2001, 43 patients who had recent bleeding from esophageal varices were treated with EBL using

reloading MRL (Multi Ring LIGATOR ; COOK.co.ltd), none of these patients had received prior sclerotherapy from variceal hemorrhage. All of patients underwent gastroscopy prior to EBL to exclude other causes of bleeding and document varices. Generally, all patients present with UGIH underwent gastroscopy in our hospital. If patients had bleeding or evidence of bleeding esophageal varices, EBL was done. Mean time after admission to banding was 6 hours (1-12 hours). Treatment was evaluated by early rebleeding (within 30 days), variceal eradication, complication and mortality. Varices were graded (1-4) and number of columns were recorded. Only varices in lower esophagus 10 cms. from EG-Junction were graded and banded. Varices were considered eradicated when scar replaced varices and was unable to suck it up for banding. Firstly, EBL banded as close to EG-Junction as possible. Subsequent sessions of treatment, 4 weeks from first time, aim to ligate all visible varices 10 cms. from EG-Junction.

Major complication were defined as any untoward event directly related to EBL that result in prolongation of hospitalisation.

Reloading technique narrated and show as figures

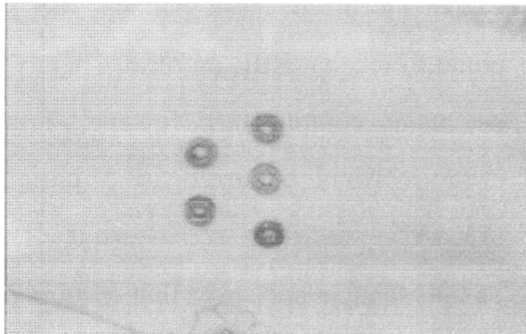


Figure 1 Hemorrhoid rubber band Z8Bht/piece)

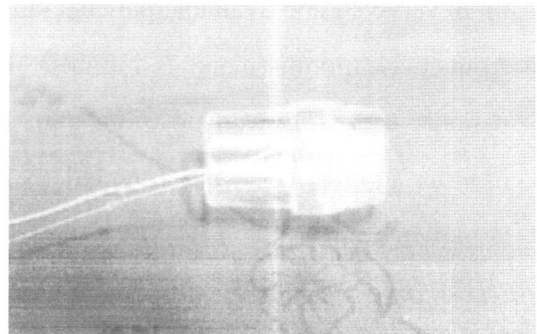


Figure 2 Used kit set

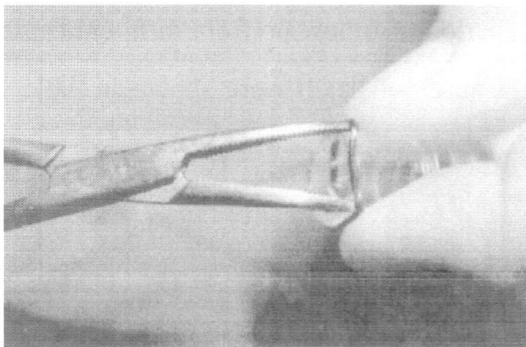


Figure 3 Use Atrial Forceps to rubber ring to the cap

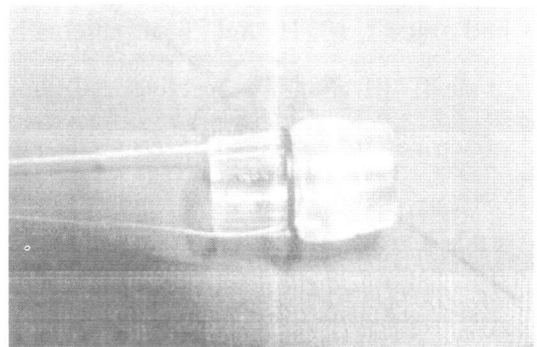


Figure 4 After push rubber ring to the cap

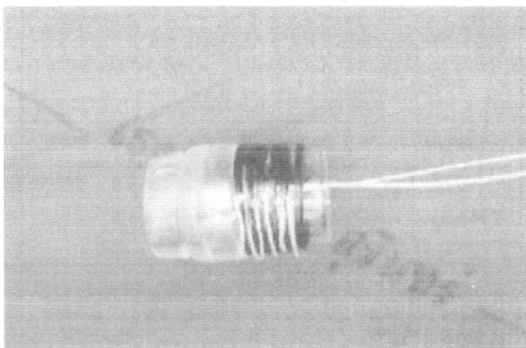


Figure 5 Use Atrial Forceps to rubber ring to the cap

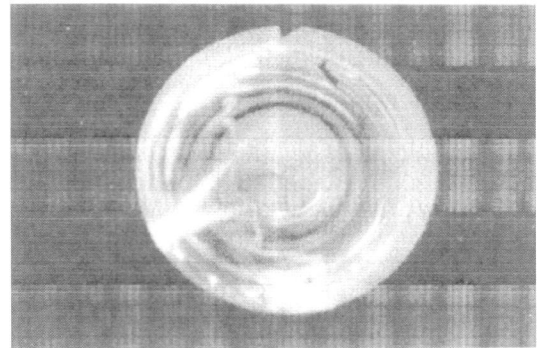


Figure 6 After push rubber ring to the cap

There were 31 male and 12 female with age from 19-63 years (mean 47.9 years), 15 were classified as Child's A, 20 were Child's B and 8 were Child's C (Pugh's modification). 35 patients (81.40%) had alcoholic liver disease, 5 patients were

chronic hepatitis, 3 patients were cryptogenic cirrhosis and one patient had HCC on top cirrhosis. Initial hematocrit range from 15-35% (mean 25%). Twenty five patients (58.14%) had first episode of bleeding. Length of hospital stay range

from 3-14 days (mean 5 days). Follow up in survived and available patients range from 1-24 months(mean 6 months), 16 patients were followed up more than 12 months and varices were founded to be heal after multiple EBL (4-6 times). Endoscopic grading of varices was classified in 4 grades, none of patient had grade I, 10, 10 and 23 of patients had grade II, III and IV respectively. Columns of varices range from 2-5 columns.

Rebleeding after EBL occurred in 5 patients,all of these patients did not come to receive EBL on time. There was no major complication.However, minor complications occurred in 5 patients (11.63%) such as retrosternal chest pain,dysphagia and fever that required no treatment. 6 patients (13.55%) died in period of follow up from different causes. Causes of death were shown in table 1

Table 1 cause of death

Causes of death	Number of patients (%)	
Rebleeding from varices	2	(4.65%)
Massive bleeding	1	(2.32%)
Hepatic faillure	2	(4.65%)
Advanced HCC	1	(2.32%)

During follow up period (1-24 months), 21 patients (48.83%) lost follow up before endoscopically shown healed varices and 16 patients (37.21%) had healed varices. Afterward, the healed patients had undergone endoscopic examination every 3 months until now and no one had rebleeding from varices. The result of EBL was shown in table 2

Table 2 result of EBL

Result of EBL patients	Number of patients (%)	
Dead	6	(13.5%)
Healed	16	(37.2%)
Rebleeding from varices	5	(11.6%)
Loss F/U (F/U less than 6 month)	21	(48.8%)

Discussion

Endoscopic ligation of esophageal varices is a new technique developed by Stiegmann and co worker⁽⁸⁾ in an attempt to provide endoscopic treatment for bleeding esophageal varices that is at least as effective as sclerotherapy but lower complication rate. The mucosa and sub-mucosa of esophagus (containing the variceal channel) are ensnared, leading to strangulation, sloughing and fibrosis. Many control trials^(9,10,11) comparing sclerotherapy with EBL showed that EBL had effectiveness in bleeding control 86-100% whereas sclerotherapy had 72-92.5%. Moreover EBL had fewer complication and more quickly to eradicate varices as well.

Unfortunately, high cost of EBL set (1,000Bht/1 banding) limit usage for every case of patients with bleeding

varices. So we developed technique to reload useless set with hemorrhoid rubber different from other technique⁽⁷⁾ and we can make it comparable to the original one.

We have 43 cases of bleeding varices. Most of them are alcoholic cirrhosis, 2 cases (4.65%) died of re-bleeding varices. However, re-bleeding occurred because all of them did not undergo sequential EBL (loss follow up). The causes of death in other cases were not according to bleeding varices. Only 16/43 cases (37.2%) had undergone re-EBL every month until healing occurred, the rest of them lost follow up after 1-3 sessions of EBL. Striking result of 16 patients showed that all of them never had re-bleeding from esophageal varices and everyone are still alive.

Conclusion

Reloading hemorrhoid rubber band is effective treatment modality for bleeding esophageal varices.

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