

Hand-made Rubber Band Ligater (MUF. - PP Ligater, V1) for Treatment of Hemorrhoids.Phichai Phongmanjit, M.D.¹¹Department of Surgery, School of Medicine, Mae Fah Luang University, Chiang Rai, 57100 Thailand

Received 1 March 2021 • Revised 8 March 2021 • Accepted 22 March 2021 • Published online 1 May 2021

Abstract:**Background:** Symptomatic hemorrhoid are common diseases. Most are grade II to III. Rubber ban ligation is the most effective treatment option.**Objective:** The aim of the study is to study the efficacy of the hand-made rubber band ligater, PP Ligater, (MUF. - PP Ligater, V1) in treatment grade II to III symptomatic internal hemorrhoid diseases.**Methods:** We make the hand-made rubber band ligater from the bubble milk tea straws and then use them to treat grade II to III hemorrhoidal diseases.**Results:** Rubber band ligation were undergone with PP-ligater in 116 procedures. No any complications occur during the period of studying.**Conclusions:** PP Ligater, (MUF. - PP Ligater, V1) was an acceptable device for grade II to III hemorrhoidal diseases. The hand-made rubber band ligater which made from bubble milk tea straws were used to treat symptomatic grade II to III hemorrhoidal diseases successfully. They made from a cheap material, which easy to make and everyone could make it by oneself.**Keywords:** Hemorrhoid, Rubber band ligater, Hand-made device**Introduction**

Internal hemorrhoids are common outpatient diseases.^{1,2} The non-surgical treatment consist of high fiber diet modifying, some medicines and office base procedures.³ Blaisdell in 1950s was the first who described a new technique for the ligation of bleeding internal hemorrhoids.⁴

The technique was later modified and simplified using rubber bands by Barron in the 1960s.⁵ It is now used worldwide because of its simplicity and safety. There are many treatment options but rubber ban ligation are the most effective.⁶ One large cases series reported cure rate of 93% and a recurrence rate of 11% after 2 years.⁷

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We choose rubber band ligation as our treatment of choices for symptomatic internal hemorrhoids. There are many instruments used for hemorrhoid rubber banding. We have made our own rubber band ligater. It is really handmade and made from a very cheap material, bubble milk tea straw.

Objective

Many types of rubber band ligater have some costs and need maintenance. So we make our own rubber band ligaters to use in our outpatients department. They are made from very cheap materials, the bubble milk tea straws, and indeed disposable only one time used. We named it as PP Ligater, (MUF. - PP Ligater, V.1).

How I do it?

1. One pairs of bubble milk tea straw, we should choose them in the difference color. (Figure 1)
2. The outer straw was cut with scissors as shown in figure 2.
3. It was cut through at inferior rim, so it could cover over the inner straw.
4. The outer straw was held with adhesive tape at the cut inferior rim to fit to the inner straw.
5. The inner straw was also cut with scissors as shown in figure 3.
6. The inner straw was cover with the outer one. (Figure 4)
7. A tooth piece insert through the inner straw for straw sliding on each other. (Figure 5)

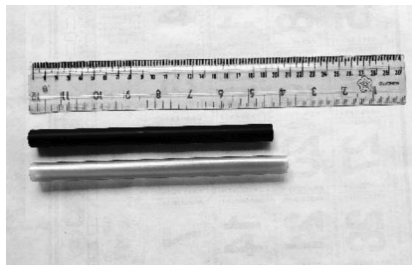


Figure 1

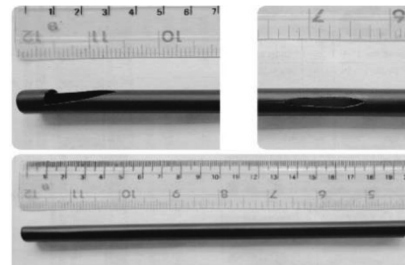


Figure 2

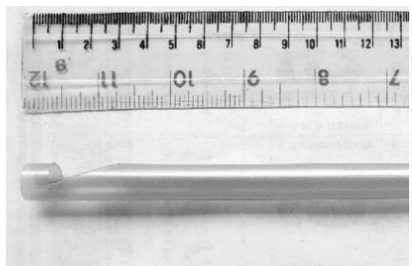


Figure 3



Figure 4



Figure 5

Results

During October 2020 to February 2021, there were 60 hemorrhoid patients. Rubber band ligation were undergone with PP-ligater in 116 procedures as shown in Table 1

Table 1 Characteristics of cases and procedures

Hemorrhoids	Cases	Procedures
Grade II	21	32
Grade III	37	80
Prolapsed rectal mucosa	2	4

The procedures were performed without any sedation or local anesthesia use. The patients could tolerate pain well. Minimal to no bleeding were observed. No any complications occur during the period of studying.

Discussion

Treatment of symptomatic internal hemorrhoidal diseases consisting of adequate fluid and high fiber diet modifying and counseling regarding defecation habits. Medical therapy for hemorrhoids represents a heterogeneous group of treatment options that can be offered with expectations of minimal harm and a decent potential for relief.

Most patients with grade I and II and select patients with grade III internal hemorrhoidal disease who fail medical treatment can be effectively treated with office-based procedures, such as banding, sclerotherapy, and infrared coagulation (IRC). Hemorrhoid banding is typically the most effective option.⁸

The most popular and effective treatment is rubber band ligation (RBL), which has been shown to be superior to

sclerotherapy and IRC.⁶ The efficacy of RBL in treating grade II and III hemorrhoids was evaluated in a randomized controlled trial (RCT), and after 1 year, 49% of the 176 patients had recurrent hemorrhoidal symptoms, of which the majority were treated with repeat RBL, 32% of the cohort required additional procedures and more than half of which were repeat RBL.⁹

We choose rubber ban ligation as our treatment of choices for symptomatic hemorrhoids. There are many instruments used for hemorrhoid rubber banding. Many types of rubber band ligater have some costs and need maintenance. So, we make our own rubber band ligaters to use in our outpatient department. They are made from very cheap materials, the bubble milk tea straws, and indeed disposable only one time used.

At the Medical Center Hospital (MCH-MFU), there are more than 200 cases of internal hemorrhoids a year. Most of them are classified as grade II to III.

Conclusions

PP Ligater, (MUF. - PP Ligater, V1) was an acceptable device for grade II to III hemorrhoidal diseases. It made from a cheap material. It was easy to make, so everyone could make it by oneself.

Acknowledgement

The author would like to thank to the patients and physicians, participants of this study, for their permission and cooperation. We would also like to thank Roger Timothy Callaghan, MB ChB for his careful reading of our research work and his suggestion for English usage. We wish to express our special thanks to all the staff in Medical Center Hospital, Mae Fah Luang University for their precious assistance, and also giving permission for gathering information.

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