

## Barron Banding is an Effective Technique for Treating Hemorrhoids as an Outpatient

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### **ABSTRACT:**

#### **BACKGROUND:**

Hemorrhoids (piles) are vascular structures in the anal canal that act as cushions to aid with stool management. When bloated or irritated, they cause a problem.

#### **OBJECTIVE:**

The objective of this study is to see how effective rubber band ligation is for treating symptomatic first, second, and third degree hemorrhoids, as well as how to handle post-operative complications.

#### **METHODOLOGY:**

This is a descriptive case series study to examine the effectiveness, safety, quality of life, and outcomes of rubber band ligation (RBL) for first, second, and third-degree internal symptomatic hemorrhoids in 250 patients who presented to the outpatient clinic between August 2015 and March 2017; all underwent rubber band ligation using the Barron applicator on an outpatient basis for first, second, and third-degree internal symptomatic hemorrhoids. Anal fissures, fistulas, anticoagulant treatment, and blood disorders were all ruled out. The information was gathered from the patient's files. Patients were requested to return to the outpatient clinic for follow-up at two weeks, one month, and six months, as well as receive a phone call every six months for the next two years.

#### **RESULTS:**

From 250 patients, 180 were cured (72%), 130 were cured in the first session, 50 required additional sessions, and 20 patients had some complications (8%) of all cases, including one patient who only required hospitalization due to bleeding, nine patients who developed a perianal abscess that was drained under local anesthesia, and 25 patients who developed a rectal ulcer that was successfully treated with rectal sucralfate enema. Almost all of the patients were men, with the exception of seven females, and their ages ranged from 12 to 92.

#### **CONCLUSION:**

Rubber band ligation is a simple, safe, and effective outpatient treatment for symptomatic first, second, and third-degree hemorrhoids. It contributes to a significant improvement in quality of life by reducing pain and allowing patients to return to daily activities sooner. It should also be considered the first line treatment for elderly patients or those who cannot tolerate general or spinal anesthesia. In terms of anal stricture, RBL has no effect on anorectal functioning. In grade 3 hemorrhoids, however, patients may require more than one treatment.

**KEY WORDS:** Rubber band ligation, rectal bleeding, Barron applicator, hemorrhoids, piles, hemorrhoidectomy.

### **INTRODUCTION:**

Hemorrhoids are cushions of submucosal tissues in anal canal containing venules, arterioles, and smooth muscle fibers, three major hemorrhoidal cushions are found in lithotomy position.<sup>(1)</sup>

Hemorrhoids are assumed to be part of the continence mechanism, assisting in the full closure of the anal canal during rest. Because hemorrhoids are a natural feature of anorectal anatomy, they should only be treated if they

become symptomatic. Excessive straining, increased abdominal pressure, and hard stool all contribute to hemorrhoidal plexus venous engorgement, which can lead to hemorrhoidal tissue prolapse, bleeding, thrombosis, and symptomatic hemorrhoid prolapse.<sup>(2)</sup>

Hemorrhoids can be classified as internal or external hemorrhoids. External hemorrhoids are found distal to the dentate line and are covered by anoderm. Because the anoderm is densely innervated, thrombosis of external hemorrhoids can cause severe discomfort. External hemorrhoids should not be ligated or removed without enough local anesthetic for this reason.<sup>(3)</sup>

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A skin tag, which is a superfluous fibrotic skin as a residua of a thrombosed external hemorrhoid, can be discovered at the anal margin. Skin tags are sometimes confused with symptomatic hemorrhoids; however, both can cause irritation and trouble with hygiene if they are large. Only symptomatic relief is recommended with excision.<sup>(4)</sup>

Internal hemorrhoids are positioned along the dentate line and are covered by anorectic

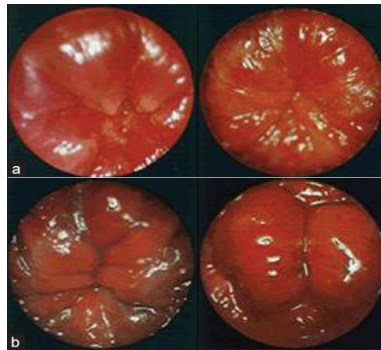
mucosa that is insensate. Internal hemorrhoids may prolapse or bleed, although they seldom cause discomfort unless thrombosis and necrosis occur (usually related to sever prolapse, incarceration, and/or strangulation). Internal hemorrhoids are evaluated based on how far they have prolapsed. This grading system is useful for comparing and contrasting different therapies.<sup>(5)</sup>

**Table 1: Grading of internal hemorrhoids.**

Grade 1	Bleeding without prolapse
Grade 2	Prolapse with spontaneous reduction
Grade 3	Prolapse with manual reduction

Interoexternal hemorrhoids combined internal and external hemorrhoids straddle the dentate line and have similar symptoms.

Large symptomatic mixed hemorrhoids frequently necessitate hemorrhoidectomy.<sup>(6)</sup>



**Figure 1 : "(a) Proctoscopic grades 1 and 2; (b) Proctoscopic grades 3 and 4"**

Because of the anastomoses connecting the portal venous and arterial systems, portal hypertension was long assumed to increase the risk of hemorrhoidal bleeding (middle and upper hemorrhoidal plexuses). Hemorrhoidal illness is no more frequent in people with portal hypertension than in the general population, according to new research<sup>(7)</sup>.

Some patients may have incarcerated or strangulated hemorrhoids, and some patients may have anemia. Soiling can develop in third or fourth degree hemorrhoids as a result of decreased continence or mucous discharge, which can cause perianal discomfort and itching.<sup>(8)</sup>

Many modalities and procedures have been developed to treat symptomatic piles, and while many of them are helpful in managing symptoms, they all share the problem of recurrence, at least from the patient's perspective.<sup>(9)</sup>

Although surgical hemorrhoidectomy is more definitive in symptom control, it also has a reputation for being a painful procedure for a relatively benign disorder. First, second, as well as third degree pile foundations can be treated non-surgically in outpatient clinics, while severely prolapsed (grade 4) circular piles can be treated with a variety of surgical techniques such as Milligan Morgan, Longo, and others.<sup>(10)</sup>

Nonsurgical techniques aim at tissue fixation (sclerotherapy, cryotherapy, ultroid, photocoagulation, and laser) or tissue excision (rubber band ligation). RBL is the most widely used procedure and allows piles to be resolved without the need for hospitalization or anesthesia, as well as with a lower risk of complications.<sup>(11)</sup>

Hemorrhoids with symptoms RBL can be used to cure even chronic bleeding from first, second, and third degree hemorrhoids.<sup>(12)</sup>

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Rubber band ligation is a treatment in which the hemorrhoid is tied off at the base with rubber bands, thus cutting off the hemorrhoid's blood supply. Only internal hemorrhoids are treated with this method.<sup>(2)</sup>

A doctor puts an anoscope (a viewing tool) into the anus to do this surgery. An instrument is used to grab the hemorrhoid, and a gadget is used to wrap a rubber band around the hemorrhoid's base. The hemorrhoid then shrinks and dies, eventually falling off after approximately a week.<sup>(13)</sup>In the site of the hemorrhoid, a scar will grow, keeping surrounding veins from bulging into the anal canal.

In a doctor's office, the procedure is performed. If the rubber bands are too tight, you will be

asked. A medication may be put into the banded hemorrhoids to numb them if the bands are really uncomfortable.<sup>(14)</sup> You may have discomfort and a feeling of fullness in your lower abdomen following the surgery. You may also feel compelled to make a bowel movement. If done in the doctor's office, treatment is restricted to 1 to 2 hemorrhoids at a time. If the patient is under general anesthesia, many hemorrhoids can be treated at the same time. At 4- to 6-week intervals, more regions can be treated.<sup>(15)</sup>

The objective of this systematic review was to see if the RBL method differed in efficacy and safety from non-operative treatments often used as in-hospital procedures.

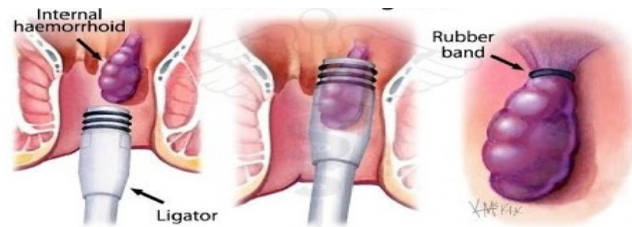


Figure 2: "rubber band ligation"

### Methodology:

A set of prospective clinical cases From August 2015 to March 2017, 250 patients were studied for a year and six months. Patients having anal fistulas, anal fissures, or anticoagulant treatment were excluded. All patients had a comprehensive clinical history taken, with special emphasis paid to rectum hemorrhage, difficult defecation, and prolapse. All patients underwent a thorough

clinical examination, which was followed by a local examination (DRE) and proctoscopy.

### RESULTS:

Our study included 250 hemorrhoid sufferers. The average age of the patients was 40 years and 25 days. There were 243 male patients (97.2%) and 7 female patients (2.8%). However, it is not significant statistically (chi square 0.16 and p-value 0.68).

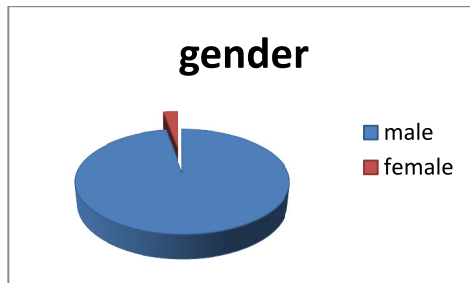
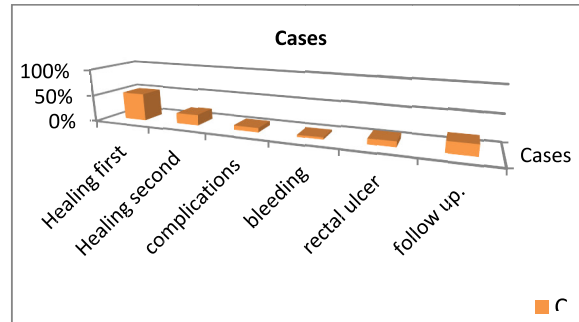


Figure 3: Male to female ratio.



**Figure 4: A graphical representation for the postoperative results illustrated.**

**Healing and Recurrence:**

In RBL, 180 patients were cured (72%), one hundred thirty patients in the first session, fifty patients require another sessions. (chi-square = 1.937 . the p-value = 0.08961).

**Complications:**

Twenty patients; (8%) of all cases, including one patient only required hospitalization due to bleeding, 9 patients develop perianal abscess which was drained under local anesthesia and 25 patients develop rectal ulcer which was successfully treated with rectal sucralfate enema

which is considered the first time newly method ever used which result in complete healing, fifty patients develops recurrence (20%) of all patients after 6 months follow up.

**Outcome measures**

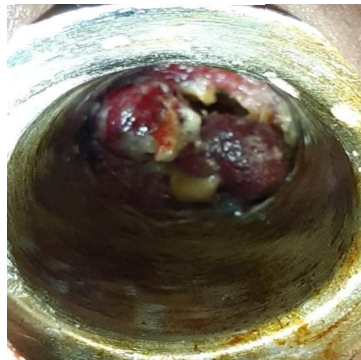
A total of four parameters were evaluated (pain, bleeding, recurrence and early return to daily activities). The patient's post-operative discomfort was assessed. Paracetamol amp 500 mg iv was administered as a post-operative analgesic.



**Figure 5 :20 day after banding piles.**



**Figure 6 :Rubber of anoscopic view of the sit of healing ulcers**



**Figure 7: Anoscopic view of internal piles after banding shows ischemic change.**

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Figure 8 : Internal pile before rubber banding



Figure 9 :after banding of internal pile

### DISCUSSION:

Our findings back with prior research indicating the RBL technique provides satisfactory results in terms of symptom recurrence, at least in the near term. RBL is also linked to a reduced risk of problems. Hemorrhoids can be treated without surgery in a variety of ways.<sup>(16)</sup> Many studies have studied the rubber band ligation method (RBL), which was initially reported by Barron in 1963 and is regarded successful and associated with few problems RATAN et al 2018<sup>(10)</sup>. A retrospective analysis of 250 individuals was conducted by RIVADENEIRA et al 2011. 180 patients were cured (72%), 130 in the initial session, 50 in subsequent sessions, and 20 patients had some problems (8%) of all cases, including one patient who only needed hospitalization due to bleeding. 9 patients developed a perianal abscess that was drained under local anesthesia, and 25 patients developed a rectal ulcer that was successfully treated with rectal sucralfate enema, which is considered the first time a new method has been used that resulted in complete healing. After 6 months, 50 patients developed recurrence (20%) of all patients.<sup>(17)</sup> Studies also indicated that the RBL procedure is cost-effective compared with other procedures SANCHEZ et al 2011, LOHSIRIWAT et al 2015 and HIGUERO et al 2016<sup>(5, 9, 13)</sup>. The RBL method may be done as an outpatient treatment without the need of general anesthesia, therefore it doesn't need to be done in the hospital. The RBL operation provides comparable results to numerous distinct non-operative approaches, and the complication rate is minimal and comparable to other non-operative therapies, according to this study YILMAZ et al 2012<sup>(18)</sup>. Because there are so many non-operative methods, multiple research comparing alternative approaches to RBL have been conducted. However, we are aware of just a few researches that compare each approach to RBL.

The comparison of various distinct approaches with RBL might be argued to be incorrect because the mechanisms involved are different. All procedures, however, aim to treat the same degenerative alterations and may be done as an outpatient procedure. AZIZI et al 2010<sup>(19)</sup>. The findings showing the RBL operation has a similar recurrence rate as other procedures and that the degree of complications is comparable to other treatments are thus important. These preliminary findings also suggest that a qualified physician in a Primary Care setting might safely undertake the RBL treatment. ARAM et al 2016.<sup>(1)</sup>

### CONCLUSION:

It is a highly successful and safe technique with few serious side effects. It is critical to understand the patient's medical history, including comorbidities and medications, prior to putting the bands. Analgesia, stool softener, warm sitz baths, and information on early and late problems are all required after RBL. If difficulties arise, it is critical to recognize them early and address them as soon as possible to ensure a positive outcome.

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