ORIGINAL ARTICLE

Comparitive Study of Multiple Versus Single Rubber Band Ligation for Internal Hemorrhoids

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Abstract

Rubber band ligation for hemorrhoids was used for treating 1500 consecutive patients affected by 2nd and 3rd degree hemorrhoids over a period of 3 years (1999-2001). The patients were divided into 2 groups: Group 1, 710 patients treated by the method of "multiple ligations"(2 or 3) in a single session and Group II, 790 patients treated by the method of "single Ligation" at one time over the same period. Post-procedural results were satisfactory in 82% patients in Group I and 90% patients in Group II. Complication observed in Group II were significantly lower than Group I. Thus, we conclude that rubber band ligation is a better modality of treatment for internal hemorrhoids if it is made with one ligation at a time, repeating the procedure every 3 weeks.

Key words

Rubber band ligation, Hemorrhoids

Introduction

Hemorrhoidectomy was considered to be the optimal form of treatment for hemorrhoids a few decades ago. Now-a-days in addition to hemorrhoidectomy, other regimens such as medical treatment, rubber band ligation (RBL), sclerosing therapy, cryotherapy or photocoagulation have been used. Inspite of so many modalities of treatment, the optimal form of treatment is still controversial (1).

The success rate of RBL varies in different studies from 69-97% (2-5) sparing the problems that are associated with surgical procedures (6). RBL inspite of the minor complications (1) has become an essential treatment of choice for symptomatic grade I and grade II hemorrhoids. The procedure becomes much safer and complications are reduced to a minimum when a single RBL is done in one sitting (1) and the complication rate rises when multiple ligations are performed in a single session (7).

Since hemorrhoids are quite a common problem in our part of the world, probably because of increased frequency of constipation secondary to consumption of low fibre diets, we thought it worth while to undertake a prospective study over a period of 3 years and assess the response of RBL as a comparative study i.e. Multiple ligations versus single ligation, so that the outcome of the result can be used for the quality cure of Grade II and Grade III hemorrhoids on outpatient basis. In the past, we have used RBL at Sher-i-Kashmir Institute of

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Medical Sciences for (SKIMS) nearly two decades on more than 10000 patients, so our technical expertise for applying the band is par-excellence and our complications and failure rates are very less in comparison to other studies (1). After the outcome of our prospective study we usually prefer now multiple session rather than a single session.

Materials and Methods

A prospective study was planned over a period of 3 years to compare the results of Multiple versus, single band ligation on a total number of 1500 patients attending the outpatient department of SKIMS and its Medical College Hospital was performed. The patients were divided in two groups:

Group I in whom multiple ligations in a single session was performed for 2 or more hemorrhoidal masses. Any patient with a single hemorrhoidal mass was excluded from this group.

Group II where only a single ligation in one sitting was done. The other hemorrhoidal masses were not touched. Again patients with only a single mass were excluded from this group as well.

Both groups of patients were advised to follow the hospital after a period of 3 weeks, and were subjected to proctoscopic examination for any complications while as in group II patients, the RBL procedure for other mass was repeated and followed up again at 3 weeks. Patients were again subjected to RBL third time, whosoever, had more than 2 masses in group II.

The patients selected for our study had 2nd and 3rd degree hemorrhoids who remained symptomatic inspite of medical treatment (high residue diet, mild laxatives, and local treatment) and who did not have any associated local or systemic problems. Ligation in all cases was done as per Barron's technique (8). Group I comprised of 710 patients (515 males and 195 females; average age 45 years) and Group II of 790 patients (570 males and 220 females, average age 42 years).

Multiple ligations (upto 3) were made in I session in group I patients, whereas one ligation at a time was performed in group II patients, repeating the procedure every 3 weeks, upto a maximum of three times per patient. Most of the cases were followed up for 3-6 months after last procedure. The morbidity and outcome of the procedure was assessed.

Statistical comparison was made using the X^2 method

Complete recovery was defined as the recovery in those patients who would be completely free of their symptoms of hemorrhoids or any residual hemorrhoidal masses at or after 6 months.

Partial recovery was defined as the recovery in those patients who would be benefited by the procedure with regard to their symptoms, hemorrhoidal masses but some resides in the form of mild symptoms or hemorrhoidal masses may still be seen at or after 6 months.

Results

Table 1. Outcome 6 months after RBL

	Group-1 *n*=595*	Group-II *n*=635*
Complete recovery	410 (67%)	525 (83%)
Partial recovery	79 (15%)	43 (7%)
Relapse	106 (18%)	67 (10%)
Surgical Treatment	46 (8%)	32 (5%)

$p < 0.01$ between groups

*Rest of the patients were lost to follow-up.

Table 2. Postoperative complications following RBL

	Group-1 *n*=595	Group-II *n*=635
Pain	89 (15%)x	32 (5%)
Spasm	62 (10%)y	20 (3%)
Bleeding	111 (19%)z	20 (3%)
Sepsis	12 (2%)	7 (1%)
Slippage	12 (2%)	Nil
Rubber band removal	24 (4%)	7 (1%)
x	y	z
$p<0.01$	$p<0.01$	$p<0.01$

Discussion

In the modern era efforts have been on to find an alternative to Millin and Morgan's classical

hemorrhoidectomy which would be less mutilating, less painful, can be performed on outpatient basis and without anaesthesia. Ultimately a few break throughs were made by the advent of multiple regimes like medical treatment, rubber band ligation(RBL), sclerosing therapy, cryotherapy or photocoagulation. In most parts of the globe, RBL was preferred because of technical ease, cost factor and excellent results for symptomatic hemorrhoids. RBL is now considered by many authors as treatment of choice for symptomatic hemorrhoids (1, 6).

Post procedure complications reported with RBL have been pain, bleeding and sepsis. In the present study pain was reported in 15% of Grade-II and 5% of Grade III patients. Complication of pain is usually decreased when ligation are made above the dentate line. We found a significant difference in decreasing the complication of pain by using RBL in multiple sessions, which is as reported in literature (1,8).

We also noticed a variable amount of spasm of the anal sphincter associated with multiple ligations in one session, which, almost was not found in Group II. Incidence of post procedural bleeding decreased from 19% to 3% in Group II patients. No bleeding episode was severe enough to warrant any supportive measures or transfusion (1,7,9). We encountered 1-2% patients getting post-procedural sepsis, and in no case, we found perianal sepsis leading to septicemia as reported in literature (8,10,11).

The RBL had to be removed in 4% cases in Group I and in 1% cases in G-II secondary to complications of pain or anal spasm. This complication also showed a direct proportionality to the number of ligations made.

We also noticed slippage of rubber bands in 2% patients when multiple ligations were made; may be because of not placing the rubber band appropriately in an un-cooperative patient.

6 months follow up was made on maximum patients. Some of them were lost to the follow-up. A complete recovery was seen in 67% patients in Group-I and 83% patients in Group-II. While as, partial recovery, was reported in 15% in Group I and 7% in Group II. Also, relapse rate was higher in Group I (18%) as compared to Group II(10%). Ultimately 8% patients needed surgical treatment in Group-I while as only 5% from Group II.

To conclude, RBL is a safe procedure, can be performed on out-patient basis without any anaesthesia (only 2% local xylocaine jelly used) by any resident of the surgery and is cost effective. In order to increase its safety profile and make it virtually free of complications, we suggest only one ligation in one session and a proper placement of the rubber band above the dentate line by any resident doctor after a proctoclys enema.

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