

## A comparative study of the effectiveness of Rubber band ligation and suture ligation under vision as a treatment modality in second degree haemorrhoids.

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### Abstract:

**Objectives:** To compare the effectiveness, complication, cost effectiveness, hospital stay, time off work and patient assessment of treatment by Rubber Band ligation and suture ligation under vision in the treatment of second degree haemorrhoids.

**Methods:** A prospective interventional study of 40 cases of second degree haemorrhoids was carried out from 1<sup>st</sup> jan2011 to 31<sup>st</sup> march 2012 at R.G.Kar hospital Kolkata.. All patients both male and female who presented with second degree haemorrhoids were included in the study, and these were divided in two group randomly One group was treated by Barron's band Ligator and rubber bands (RBL) on outdoor basis and the other group was treated by suture ligation under vision (SL) under anaesthesia. Both the groups were followed after one, three and six months.

**Results:** Bleeding was the chief complaint in 75 % cases of second degree haemorrhoids. No anaesthesia was required for RBL cases but all suture ligation cases were done under saddle block. An average of one day hospital stay was required in 75% cases of suture ligation in whereas RBL was done as an outdoor procedure. The average expenditure was much higher in suture ligation group as compared to RBL group. The post-operative pain and discomfort was same in the both the groups and no recurrence was found after 6 month follow up in both the groups.

**Conclusion:** After analyzing our study we found that RBL was definitely a better option for 2<sup>nd</sup> degree haemorrhoid treatment not only for the affordable class but also for the vast majority of poor patients in our country.

**Keywords:** Second degree haemorrhoids, Rubber Band ligation (RBL), Suture Ligation (SL) under vision.

### I. Introduction

For centuries human race has been plagued by condition called haemorrhoids. Yet the whole subject is still clouded by misconception and folklore<sup>1</sup>. Haemorrhoids are defined as special vascular cushions of discrete masses of thick sub mucosa, containing blood vessels, smooth muscles and elastic tissues which may slide down due to breakage of collagen and anchoring connective tissue causing symptoms like bleeding and prolapse. Clinically internal haemorrhoids are classified as 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> degree<sup>2</sup>. Second degree is defined as mucosal prolapse beyond the anal sphincter and the patient realizes that there is a protrusion but it disappears spontaneously after defaecation is completed. There are many methods of treatment for this disease like sclerotherapy, Rubber band ligation, cryosurgery, Suture ligation under vision, DGHAL, Haemorrhoidectomy etc. We are comparing RBL and SL for 2<sup>nd</sup> degree haemorrhoid management as these procedures are easy to perform than other procedures.

### II. Methods:

A Prospective interventional study of 40 patients who visited the OPD and were diagnosed to have 2<sup>nd</sup> degree haemorrhoids from 1<sup>st</sup> January 2011 to 31<sup>st</sup> march 2012 at R.G.Kar hospital Kolkata was carried out. Both males and females were included in the study. All patients with painless bleeding per rectum, irritation, discharge per rectum or prolapsed tissue who after clinical examination were diagnosed with 2<sup>nd</sup> degree haemorrhoids were included in the study. Patients with bleeding disorders, HT, diabetes, pregnancy, immunocompromised patients and those having anal fistula and fissure were excluded from the study. After proper history taking, clinical examination and laboratory workup patients were explained in detail about the various modalities of treatment and they were randomly assigned the RBL group or the SL group. A total of 20 patients were assigned to each group. RBL was done using Barron's rubber band ligator without anaesthesia as an OPD procedure and patients were discharged the same day after 1 hour if comfortable on analgesics. The patients assigned SL group were operated under saddle block after adequate pre operative

work up . The anus was dilated and three polyglycolic sutures were applied there by occluding the connection between the haemorrhoidal venous plexuses and the superior and inferior haemorrhoidal vessels. Patients were discharged from the hospital next day on antibiotics ofloxacin-ornidazole, analgesics, laxatives and sitz bath for 2 weeks . All the patients were followed up in the OPD after 1,3 and 6 months.

### III. Result:

In the present prospective clinical study of 40 cases at R G Kar hospital who underwent RBL or SL for symptomatic second degree hemorrhoids following results were obtained.

#### Chief complaint

Chief complaint	No of patients
Bleeding	30
Prolapse	06
Pain	04

Above result show 75% patients presented with chief complaint of bleeding P/R .

#### Requirement of anaesthesia

	RBL	SL	Chi-square with Yates correction	P value
Spinal anaesthesia	0	20	36.10	0.000
No anaesthesia	20	0		

All patients of SL required anaesthesia. Chi –square with Yates correction value is 36.10 P value is 0.000. Table shows that requirement of anaesthesia was significantly different amongst the 2 groups

#### Post procedure event

	RBL	SL
Discomfort	14	10
Pain	02	04
Bleeding	04	05
Urinary retention	-	01
Sepsis	-	-
Vasovagal reflex	-	-

Most common postoperative complain was discomfort after both procedures.

#### Hospital stay

	RBL	SL	Fischers exact test chi square value	P value
OPD	19	0	36.67	0.000
1 Day	01	15		
2 Day	0	04		
3 Day	0	01		

Fishers exact test chi square value 36.67p and p value 0.000.This table shows that hospital stay was significantly different among 2 groups

#### Average expenditure

	Average Expenditure	P value
RBL	78.70 INR	0.000
SL	712.90 INR	

This shows that expenditure of SL was much higher than RBL group

**Time off work**

	RBL	SL	Mann Whitney U	P value
none	17	0	26	0.000
1-3 days	3	18		
>3days	0	2		

Number of days without work was more after suture ligation.

**Symptoms on follow up**

	Rubber Band Ligation			Suture Ligation		
	1 month	3 month	6month	1month	3month	6month
Bleeding	2	1	1	3	2	2
Pain	1	1	-	1	-	-
Prolapse	-	-	-	-	-	-
Irritation	1	-	-	2	-	-
Discharge	1	-	-	-	-	-
Anal stenosis	-	-	-	-	-	-
Symptom free	15	18	19	14	18	18

This table shows that 95% patients were symptom free at 6 months follow up after RBL, while 90% were symptom free after 6 months follow up after SL. No recurrence was found during 6months of follow up period.

**IV. Discussion:**

Haemorrhoids is one of the oldest diseases suffered by mankind. There are not too many reported studies from India on treatment of 2<sup>nd</sup> degree haemorrhoids, hence we chose this for our study. Most of our patients presented with multiple complaints but the chief complaint was bleeding in 75%, prolapse in 15% and pain in 15%. Bleeding is the principal symptom in most studies like 97% by Murie<sup>3</sup> et, 88% by Arabi et al<sup>4</sup>, and 62% in David Marshman's study<sup>5</sup>. Most common postoperative complaint was discomfort in both groups. 10% patients of RBL group had complain of pain. This is comparable with pain reported in 13% patients by Cheng FC et al<sup>6</sup>. Pain was present in 20% of SL group. In a study by M. Bronstein et al<sup>7</sup>, pain was noticed in 44% of SL group.

95% patients of RBL group were treated on OPD basis without anaesthesia while all patients under SL group were admitted in the hospital and operated under anaesthesia. So in SL group 90% patients had to take leave for to 3 days, while only 15% of RBL had to take 1-3days time of work, rest 85% were able to resume work the same day.

The average cost of treatment in the SL group was 712.90 INR on free bed as this procedure was done under anaesthesia after hospitalization. While the average cost of treatment in SL group was 78.70 INR on free bed.

In patients view, 75% patients of RBL group found this procedure excellent. This is comparable to Kartik S Bhandari (82%)<sup>8</sup> and Murie(72%)<sup>3</sup>. 55% patients of SL group found the treatment excellent. Similar data was obtained by M. Bronstein et al<sup>6</sup> (60%). However 5% patients and of RBL group and 10% patients of SL group didn't get much help with treatment in our study. Anthony Groves<sup>9</sup> noted 9% failure in RBL and M. Bronstein<sup>6</sup> noted 9% failure in SL treatment.

As this study followed patients for 6 months only, no recurrence was found in this duration of treated patients. Though the short term results are encouraging, long term follow up is required to know the actual and definitive treatment of second degree hemorrhoids. Steinberg DM et al<sup>10</sup> found 85% patients symptom free after 4.5 yrs follow up in RBL cases. Similar results were obtained by Savio D et al<sup>11</sup> (77% after 5 yrs follow up) and El Nakeeb AM et al<sup>12</sup> (89 % after 2 yrs of follow up). M. Bronstein et al found 87.5 % patients symptom free after follow up of average 21 months in suture ligation studies.

**V. Summary**

From both preoperative and post operative aspect, it is obvious that in our study RBL is definitely more advantageous procedure over SL especially in our country with high patient load, too many poor patients and limited bed capacity of our hospitals as this can be done as an OPD procedure and is cost effective.

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