

EFFICACY OF RUBBER BAND LIGATION VS HEMORRHOIDECTOMY IN 2ND AND 3RD DEGREE HEMORRHOIDS

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ABSTRACT

Background: Hemorrhoids are dilatation of internal venous plexus with an enlarged, displaced anal cushion¹. It is believed to be one of the most widely spread human suffering ranking first among disease of the rectum and large intestine.² Symptoms resulting from haemorrhoids are commonly bright red bleeding per rectum, mucosal prolapse or protrusion, and pruritus. Pain is not characteristic unless there has been thrombosis or strangulation of the haemorrhoid which possibly can lead to gangrene.³

Objective: To compare the efficacy of rubber band ligation with hemorrhoidectomy in the treatment for 2nd & 3rd degree hemorrhoids.

Material and Methods: This randomized control trial study has been conducted at Department of Surgery, Hayatabad Medical Complex Peshawar from 10 Jan 2017 to 10 Feb 2018. Sample size was 57 in each group. Sample technique used were Consecutive sampling (non probability)

Results: Frequencies and Percentages for Efficacy was recorded as 48 (84.21%) in Group A while in Group B the efficacy was recorded 30 (52.63%) with P Value 0.0002. (Table No. 3).

Conclusion: This study showed that Rubber Band Ligation (RBL) is more effective for treating 2nd and 3rd degree hemorrhoids than Hemorrhoidectomy as only few complications and low recurrence rates were noted which has enabled us to recommend this modality as the procedure of choice for the management of patients presented with 2nd and 3rd Degree Hemorrhoids.

Key Words: Hemorrhoids, Hemorrhoidectomy, Rubber Band Ligation (RBL)

INTRODUCTION

Haemorrhoids are dilatation of internal venous plexus with an enlarged, displaced anal cushion¹. It is believed to be one of the most widely spread human suffering ranking first among disease of the rectum and large intestine.² Symptoms resulting from haemorrhoids are commonly bright red bleeding per rectum, mucosal prolapse or protrusion, and pruritus ani. Pain is not characteristic unless there has been thrombosis or strangulation of the haemorrhoid which possibly can lead to gangrene.³

Haemorrhoids can be divided into four grades according to the degree of prolapse⁴. First degree piles remain internal but bleed. Second degree piles prolapsed on defecation, but reduce spontaneously, whilst third degree require manual reduction. Fourth degree hemorrhoids are permanently prolapsed and cannot be reduced⁵.

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Regarding treatment of hemorrhoids with conservative therapy include diet, lifestyle changes and hydrotherapy which requires a higher degree of patient compliance to be effective⁶. When conservative therapy is ineffective various other treatment options like injection sclerotherapy rubber band ligation, cryosurgery, infrared photocoagulation and LASAR technique are employed⁴. Each of the above mentioned options can be performed as an outpatient procedure⁷. If non surgical approach fails the patient is referred for surgery⁸. It has been reported in literature that most people in developing countries prefer non surgical treatment for hemorrhoids on account of affordability and early return to physical activity^{7,8}. Operative treatment has been the method of choice for 2nd and 3rd degree hemorrhoids but in the recent past there has been a tendency to avoid hemorrhoidectomy in favor of day case procedures⁹.

Rubber band ligation is a procedure in which elastic bands are applied on to an internal hemorrhoid at least 1cm above the dentate line to cut off its blood supply, within five to seven days withered hemorrhoids fall off⁹. If the band is placed too close to dentate line intense pain will result immediately afterward⁹. Cure rate has been found to be 87%¹⁰ with complication rate of 3%⁹.

Nowadays hemorrhoidectomy is reserved for patients with grade 4 hemorrhoids, and for those who non-surgical treatment was not effective or those with

external hemorrhoid¹¹ and it is reported to have an efficacy of 63.6% in term of re bleeding and prolapse¹². Although surgery is more definitive in symptom control, it is a painful procedure for a relatively benign disease and has some adverse effects on anal canal physiology¹³.

The present study is designed to compare the efficacy of rubber band ligation and hemorrhoidectomy in the treatment of 2nd & 3rd degree hemorrhoids. Hemorrhoids is a common illness in our population and locally many techniques are used for its treatment varying from one facility to another and from conservative to surgical treatment. Also though, the literature exists for the efficacy of treatment options for 2nd & 3rd degree hemorrhoids but locally surgeons prefer technique of their choice and in light of scarcity of local statistics about the efficacy of one procedure over the other. Also RBL has certain complications which don't occur in hemorrhoidectomy. This study will provide us with local comparison results of RBL and hemorrhoidectomy for the treatment of 2nd & 3rd degree hemorrhoids. If in this study if RBL is found to either equally or more effective than hemorrhoidectomy, we will share the results of this evidence with other local surgeons and will recommend them use of RBL in routine treatment of 2nd & 3rd degree hemorrhoids without any hesitation. This result of this study will also develop a road map for future research on the treatment of 2nd & 3rd degree hemorrhoids locally and will be beneficial once the knowledge generated from this study is added to existing body of literature in general and will be helpful for local surgeons in particular.

MATERIAL AND METHODS

This randomized control trial study has been conducted at Department of Surgery, Hayatabad Medical Complex Peshawar from 10 Jan 2017 to 10 Feb 2018.

Sample technique used were Consecutive sampling (non probability)

Sample size was 57 in each group keeping 87%¹⁰ efficacy of RBL and 63.6%¹² efficacy of hemorrhoidectomy in the treatment of hemorrhoids, 95% confidence interval and 90% power of the test.

Patients of Age group 18-65 years of either gender with 2nd & 3rd degree hemorrhoids were included while patients Patient with history of bleeding diathesis (was diagnosed by history of bleeding and coagulation profile), Colorectal carcinoma (was diagnosed on medical record and history). Ulcerative colitis (was diagnosed on medical record and history)

Patients with chronic obstructive pulmonary disease (was diagnosed on history, examination and spirometry)

Chronic constipation (was diagnosed on history, examination).

Bladder outlet obstruction (was diagnosed on history, examination and U/S).

Were excluded from this study

After approval of my study by the Institutional Ethical Committee. Patients with 2nd and 3rd degree hemorrhoids (as per operational definitions above), was selected from the outpatient setting and admitted in surgical ward of the hospital for further workup.

Written informed consent was obtained after initial assessment of symptoms based on history and clinical examination including digital rectal and proctoscopic examination; this was include explanation of the procedure itself as well as post-procedure pain and complications like bleeding, infection, sepsis and recurrence.

After inclusion, the patients were randomly allocated in two groups by lottery method. Patients in group A was subjected to rubber band ligation and patients in group B was subjected to hemorrhoidectomy. All the patients were subjected to their treatments according to their respective groups by single experienced general surgeon having minimum of five years of experience.

Post surgery, all the patients were advised standard post operative medication which was included analgesics and sitz bath and was kept strictly uniform in both groups. All the patients in either group was followed up at the end of one month after treatment to check the effectiveness of the procedure in terms of complete relief from prolapse and bleeding per rectum.

All the detail information was recorded in a specially designed Proforma, which is attached. Confounders and bias was controlled by strictly following exclusion criteria.

The data was entered into SPSS version 20.0 for Windows 7. Mean and Standard deviation was calculated for numerical variables like age. Frequencies and percentages were calculated for categorical variables like gender and efficacy. Efficacy was compared in both the groups using chi square test while keeping p value of less than 0.05 as significant. Effectiveness in both the groups was stratified among age, gender and grade of hemorrhoid to see the effect modifications. All results were presented as tables and graphs.

RESULTS

This study has been carried out on 114 patients at the Department of General Surgery, Hayatabad Medical Complex, Peshawar. The results of our study are as follows:-

As the patients were divided into two groups, Group A and Group B, in Group A patients were subjected to Rubber Band Ligation (RBL) while in Group B patients were subjected to Hemorrhoidectomy. Frequencies and Percentages for Age in Group A

Table no 1: Frequencies and Percentages for Age (N=114)

Age Group	Group A	Group B
18-30 Years	18 (31.57%)	18 (31.57%)
31-40 Years	13 (22.80%)	13 (22.80%)
41-50 Years	16 (28.07%)	16 (28.07%)
51-65 Years	10 (17.54%)	10 (17.54%)
Total	57 (100%)	57 (100%)
Mean and SD for Age	40 Years +11.48	40 Years +11.48

Group A= Rubber Band Ligation (RBL)
Group B= Hemorrhoidectomy

Table no. 3: Frequencies and Percentages for Efficacy (N=114)

Efficacy	Group A	Group B	P Value
Yes	48 (84.21%)	30 (52.63%)	0.0002
No	09 (15.78%)	27 (47.36%)	
Total	57 (100%)	57 (100%)	

Group A= Rubber Band Ligation (RBL)
Group B= Hemorrhoidectomy

Table No. 2: Frequencies and Percentages for Gender (N=114)

Gender	Group A	Group B
Male	41 (71.92%)	30 (52.63%)
Female	16 (28.07%)	27 (47.36%)
Total	57 (100%)	57 (100%)

Group A= Rubber Band Ligation (RBL)
Group B= Hemorrhoidectomy

Table No. 4: Frequencies and Percentages for Grade of Hemorrhoid (N=114)

Grade of Hemorrhoid	Group A	Group B
2nd Degree	41 (71.92%)	35 (61.40%)
3rd Degree	16 (28.07%)	22 (38.59%)
Total	57 (100%)	57 (100%)

Group A= Rubber Band Ligation (RBL)
Group B= Hemorrhoidectomy

Table No 5: Statification of Efficacy with Respect to Age (N=114)

Age	Efficacy	Group A	Group B	P Value
18-30 Years	Yes	15 (26.31%)	10 (1.75%)	0.070
	No	03 (5.26%)	08 (14.03%)	
31-40 Years	Yes	11 (19.29%)	08 (14.03%)	0.184
	No	02 (3.50%)	05 (8.77%)	
41-50 Years	Yes	13 (22.80%)	08 (14.03%)	0.062
	No	03 (5.26%)	08 (14.03%)	
51-65 Years	Yes	09 (15.78%)	04 (7.01%)	0.019
	No	01 (1.74%)	06 (10.52%)	

Group A= Rubber Band Ligation (RBL)
Group B= Hemorrhoidectomy

Table No 6: Statification of Efficacy with Respect to Gender (N=114)

Age	Efficacy	Group A	Group B	P Value
Male	Yes	34(59.64%)	18 (31.57%)	0.031
	No	07 (12.28%)	12 (21.05%)	
Female	Yes	14 (24.56%)	12 (21.05%)	0.005
	No	02 (3.50%)	15 (26.31%)	

Group A= Rubber Band Ligation (RBL)
Group B= Hemorrhoidectomy

Table No 7: Stratification of Efficacy with Respect to Grades of Hemorrhoid (N=114)

Grade of Hemorrhoid	Efficacy	Group A	Group B	P Value
	Yes	35(61.40%)	22 (38.59%)	0.023
	No	06 (10.52%)	13 (22.80%)	
	Yes	13 (22.80%)	08 (14.03%)	0.006
	No	03 (42.85%)	14 (24.56%)	

Group A= Rubber Band Ligation (RBL)

Group B= Hemorrhoidectomy

and Group B was recorded as 18 (31.57%) patients in 18-30 Years Age Group, 13 (22.80%) patients in 31-40 Years Age Group, 16 (28.07%) in 41-50 Years Age Group while 10 (17.54%) patients in 51-64 Years Age Group. Mean and SD for Age was recorded as 40 Years \pm 11.48 (Table No. 1). Frequencies and Percentages for Gender Distribution in Group A are 41 (71.92%) male patients while 16 (28.07%) were female patients. In Group B male patients were 30 (52.63%) while 27 (47.36%) were female patients (Table No. 2). Frequencies and Percentages for Efficacy was recorded as 48 (84.21%) in Group A while in Group the efficacy was recorded 30 (52.63%) with P Value 0.0002. (Table No. 3). Frequencies and Percentages for Grades of Hemorrhoids was recorded as 41 (71.92%) patients were having 2nd Degree Hemorrhoids in Group A while 16 (28.07%) were having 3rd Degree Hemorrhoids in Group A. In the same manner, in Group B 35 (61.40%) patients were having 2nd Degree Hemorrhoids while in Group B 22 (38.59%) patients were having 3rd Degree Hemorrhoids (Table No. 4). Stratification of Efficacy with respect to Age, Gender and Grades of Hemorrhoids were recorded at Table No. 5, 6 and 7 respectively.

DISCUSSION

Haemorrhoids are dilatation of internal venous plexus with an enlarged, displaced anal cushion¹. It is believed to be one of the most widely spread human suffering ranking first among disease of the rectum and large intestine.² Symptoms resulting from haemorrhoids are commonly bright red bleeding per rectum, mucosal prolapse or protrusion, and pruritus ani. Pain is not characteristic unless there has been thrombosis or strangulation of the haemorrhoid which possibly can lead to gangrene.³

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Regarding treatment of hemorrhoids with conservative therapy include diet, lifestyle changes and hydrotherapy which requires a higher degree of patient compliance to be effective⁶. When conservative therapy is ineffective various other treatment options like injection sclerotherapy rubber band ligation, cryosurgery, infrared photocoagulation and LASAR technique are employed⁴. Each of the above mentioned options can be performed as an outpatient procedure⁷. If non surgical approach fails the patient is referred for surgery⁸. It has been reported in literature that most people in developing countries prefer non surgical treatment for hemorrhoids on account of affordability and early return to physical activity^{7,8}. Operative treatment has been the method of choice for 2nd and 3rd degree hemorrhoids but in the recent past there has been a tendency to avoid hemorrhoidectomy in favor of day case procedures⁹.

Rubber band ligation is a procedure in which elastic bands are applied on to an internal hemorrhoid at least 1cm above the dentate line to cut off its blood

supply, within five to seven days withered hemorrhoids fall off⁹. If the band is placed too close to dentate line intense pain will result immediately afterward⁹. Cure rate has been found to be 87%¹⁰ with complication rate of 3 %⁹.

Nowadays hemorrhoidectomy is reserved for patients with grade 4 hemorrhoids, and for those who non-surgical treatment was not effective or those with external hemorrhoid¹¹ and it is reported to have an efficacy of 63.6% in term of re bleeding and prolapse¹². Although surgery is more definitive in symptom control, it is a painful procedure for a relatively benign disease and has some adverse effects on anal canal physiology¹³.

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CONCLUSION

This study showed that Rubber Band Ligation (RBL) is more effective for treating 2nd and 3rd degree hemorrhoids than Hemorrhoidectomy as only few complications and low recurrence rates were noted which has enabled us to recommend this modality as the procedure of choice for the management of patients presented with 2nd and 3rd Degree Hemorrhoids.

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