Original Article

Haemorrhoidectomy

Comparison of Milligan – Morgan Haemorrhoidectomy VS Rubber Band Ligation in Management of Haemorrhoids

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ABSTRACT

Objective: To compare Milligan-Morgan haemorrhoidectomy with rubber band ligation technique in management haemorrhoids.

Study Design: Prospective comparative study

Place and Duration of Study: This study was conducted at the department of surgery (surgical Unit I) Nishtar Hospital, Multan from October 2016 to March 2017.

Materials and Methods: This prospective comparative study was conducted in the department of surgery (surgical Unit I) Nishtar Hospital, Multan from October 2016 to March 2017. Total number of patients were divided into two groups (group A and B) by lottery method. Mean and SD was calculated for numerical data like age, similarly frequency percentages were calculated categorical data like gender, degree of haemorrhoids, rectal bleeding, constipation, prolapsed, discharge, pain, complications, urinary retention, low back pain and anal stenosis. Chi square test was applied for effect modification or association of outcome variables with effect modifiers. P value < 0.05 was considered as significant.

Results: Overall, there were 100% (n=534) patients; the study population was sub-divided into two groups, equally; 100% (267) in each. In group A, Milligan-Morgan haemorrhoidectomy was performed and rubber band ligation was performed, in patients of group B. Different complications were seen as pain in 76% (n=203) patients, bleeding in 18.4% (n=49) patients, Urinary retention in 17.2% (n=46) patients, Anal stenosis in 4.9% (n=13) patients and low back pain in 9.0% (n=24) patients, in group A. While, in group B, pain was noted as in 8.2% (n=22) patients, bleeding in 2.2% (n=6) patients, Urinary retention in 3.0% (n=8) patients.

Conclusion: Results of our study concluded that Rubber band ligation is better choice for the treatment plan of haemorrhoids when evaluated in terms of complication rate and outcomes.

Key Words: Haemorrhoidectomy,Milligan-Morgan, Rubber band ligation, Rectal Bleeding.

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INTRODUCTION

Haemorrhoids are posterolateral, lateral and anterolateral anal vascular cushions made up of anorectal lining and vascular plexus involvement, in lower margin loos areolar tissue also involved[1]. Hemorrhoids may be internal, external and mixed in nature; if plexus of superior vein enveloped by mucous membrane hemorrhoids were labeled as internal, if plexus of inferior haemorrhoidal vein enveloped by skin or epithelium lower to mucocutaneous junction and its drainage in systemic circulation it is considered as external hemorrhoids. Mixed or anterolateral hemorrhoids are those in which both varieties (internal or external) are mixed[2,3].

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In western world hemorrhoids are the main medical illness without discrimination of gender and age[4]. Old age population over 50 years of age (5-50%) is mainly involved. Patients of haemorroids clinically presents with rectal bleeding which is an early symptom[5], in late symptoms patients may include mucosal prolapsed or protrusion of haemorrhoids. Further prolapsed haemorrhoids may present with pruritus and perianal discharge[6,7].

Pain is not found in these cases until hemorrhoids are not supervened, diagnosis of hemorrhoids also dependant on their presentation; external presentation can be diagnosed on anal inspection but internal presentation require proctoscopy. Another classification was introduced named as Coligher classification; Grade 1 involve bleeding but not prolapsed, grade 2 are those which bleed but lessen spontaneously, grade 3 hemorrhoids are prolapsed but and require digital reduction and grade 4 are irreducible hemorrhoids[8].

Grade 1 and 2 are should be treated conservatively and life style modification (oral hydration use of fibrous diet and laxatives or stool softener) advised[9]. A very small number of cases need other management techniques like sclerotherapy rubber band ligation and

invasive management like Milligan-Morgan technique. Rubber band ligation is very easy to performed with minimum complication is the most commonly used non invasive procedure[10]. Saeed MT et al[11] conducted a study in 2017 on comparison of Milligan-Morgan and rubber band ligation for management of hemorrhoids and reported that rubber band ligation is more effective with less complications as compared to Milligan-Morgan. This study was planned to identify the right choice of management for hemorrhoids in our region and study will be used as local reference[12].

MATERIALS AND METHODS

This prospective comparative study was conducted in the department of surgery (surgical Unit I) Nishtar Hospital, Multan in time period of October 2016 to March 2017. Total number of patients were divided into two groups (group A and B) by lottery method, 267 patients in each group with diagnosis of grade 2nd and 3rd haemorrhoids. Patients in group A were treated with open haemorrhoidectomy and in group B were treated with double band ligation. Before division patients were evaluated thoroughly in consideration of history, symptoms of disease, any previous history, rectal bleeding and any history of previous ligation or open hemorrhoidectomy. Rectal, abdominal examination was done, proctoscopy and in needed cases proctosigmoidoscopy was done. Patients having history of previous rectal procedure for hemorrhoids treatment, any anal or rectal pathology, cancer, crohns's disease, coagulopathy, and anal fissures were excluded from the study. With routine investigation; complete blood count, viral markers, urine examination, X ray chest, ECG was also taken in patients of age more than 40 years.

Before start of treatment in group A all patients were prepared with kleen enema at least 24 hours before. Antibiotic coverage with metronidazole 500 mg and cephradine 1 g i/v was given when induction was started for general anesthesia GA. Procedure of Milligan-Morgan was performed in lithotomy position under GA after set protocol of endotracheal intubation. In post-operative period Metronidazole and cephradine started 8 hourly, pain killers diclofenac sodium were given on demand of patients for three to five days. In group B rubber band ligation was given under same protocols. In this group oral analgesics, antibiotics metronidazole 400 mg tablet were given, after discharge follow up was advised fifteen days to one month.

Data was entered in statistical software SPSS version 23 and analyzed for desired variable analysis, Mean and SD was calculated for numerical data like age, similarly frequency percentages were calculated categorical data like gender, degree of haemorrhoids, rectal bleeding, constipation, prolapsed, discharge, pain, complications, urinary retention, low back pain and anal stenosis. Chi square test was applied for effect modification or association of outcome variables with effect modifiers. P value < 0.05 was considered as significant.

RESULTS

Overall, there were 100% (n=534) patients; the study population was sub-divided into two groups, equally; 100% (267) in each. In group A, Milligan-Morgan haemorrhoidectomy was performed and rubber band ligation was performed, in patients of group B.

The mean age and hospital stay of the patients, in group A, was 49.01±2.04 years and 2.97±0.86 days respectively, while the mean age and hospital stay of the patients, in group B, was 37.81±2.83 years and 1.01±0.11 days respectively. Distribution of duration of stay, in group A, revealed that 4.5% (n=12) patients stayed 1 day, 21.3% (n=57) for 2 days, 49.4% (n=132) for 3 days, 21.4% (n=57) for 4 days and 3.4% (n=9) patients stayed for 5 days in the hospital. While, in group B, all of the patients were discharged on the second day of admission.There were 81.6% (n=218) males and 18.4% (n=49) females in group A, and 90.3% (n=241) males and 9.7% (n=26) females in group B. (Table 1 & 5).

Table No. 1. Comparison between ''Group A'' and ''Group' B' according to demographic data.

Variable	Group A (n=267)	Group B (n=267)	Test of Sig.
Gender	M=81.6% , F=18.4%	M=90.3%, F=9.7%	$\chi^2 = 8.206$ p=0.004
Age	49.01±2.04 years	37.81±2.83 years	$\chi^2 = 37.17$ p=0.000

Table No. 2. Clinical Examination in Groups.

Grade	Group A (n=267)	Group B (n=267)	Test of Sig.
2nd Degree haemorrhoids	(n=98),36.7%	(n=157)58.8 %,	$\chi^2 = 26.128$ p=0.000
3rd degree haemorrhoids	(n=169),63.3%	(n=110), 41.2%	
Total	(n=267) 100%	(n=267) 100%	

Table No. 3. Comparison of complications in Groups.

Complications	Group A (n=267)	Group B (n=267)	Test of Sig.
Bleeding per rectum	81.6% (n=218)	88.8% (n=237)	$\chi^2 = 5.363$ p=0.021
Constipation	59.9% (n=160)	67% (n=179)	$\chi^2 = 2.916$ p=0.088
Prolapse	56.9% (n=152)	44.2% (n=118)	$\chi^2 = 8.66$ p=0.003
Discharge	15.7% (n=42)	9.0% (n=24)	$\chi^2 = 5.601$ p=0.018

Table No. 4. Comparison of complications in Groups.

Complications	Group A (n=267)	Group B (n=267)	Test of Sig.
Pain	76% (n=203)	8.2% (n=22)	$\chi^2 = 251.6$ p=0.000
Bleeding	18.4% (n=49)	2.2% (n=6)	$\chi^2 = 37.478$ p=0.000
Urinary retention	17.2% (n=46)	3.0% (n=8)	$\chi^2 = 29.749$ p=0.000
Anal stenosis	4.9% (n=13)	0.4% (n=1)	$\chi^2 = 10.563$ p=0.001
Low back pain	9.0% (n=24)	3.7% (n=10)	$\chi^2 = 6.15$ p=0.013

Table No. 5. Distribution of Hospital Stay &Mean±S.D with Test of Significance.

Hospital Stay	Group A (n=267)	Group B (n=267)	Test of Sig.
1 day	4.5% (n=12)	98.9% (n=264)	$\chi^2 = 476.72$ p=0.000
2 days	21.3% (n=57)	1.1% (n=3)	
3 days	49.4% (n=132)	0	
4 days	21.4% (n=57)	0	
5 days	3.4% (n=9)	0	
Total	100% (n=267)	100% (n=267)	
Mean±S.D	2.97±0.86 days	1.01±0.11 days	

Clinical examination was noted as 2nd degree haemorrhoidsin 36.7% (n=98) patients and 3rd degree haemorrhoidsin 63.3% (n=169) patients, in group A. While, in group B, observed as 2nd degree haemorrhoids in 58.8% (n=157) patients and 3rd degree haemorrhoids in 41.2% (n=110) patients. (Table 2).

Bleeding per rectum was noted as in 81.6% (n=218) patients, constipation in 59.9% (n=160) patients, prolapse in 56.9% (n=152) patients and discharge 15.7% (n=42) patients in group A. While, Bleeding per rectum was noted as in 88.8% (n=237) patients, constipation in 67% (n=179) patients, prolapse in 44.2% (n=118) patients and discharge 9.0% (n=24) patients in group B. (Table 3).

Different complications were seen as pain in 76% (n=203) patients, bleeding in 18.4% (n=49) patients, Urinary retention in 17.2% (n=46) patients, Anal stenosis in 4.9% (n=13) patients and low back pain in 9.0% (n=24) patients, in group A. While, in group B, pain was noted as in 8.2% (n=22) patients, bleeding in 2.2% (n=6) patients, Urinary retention in 3.0% (n=8) patients, Anal stenosis in 0.4% (n=1) patients and low back pain in 3.7% (n=10) patients. (Table 4).

Association was found between gender (p=0.004), clinical examination (p=0.000), bleeding per rectum (p=0.021), prolapse (p=0.003), discharge (p=0.018), pain (p=0.000), bleeding (p=0.000), urinary retention (p=0.000), anal stenosis (p=0.001), low back pain (p=0.013), stratified age (p=0.000) and hospital stay (p=0.000) except constipation (p=0.088) in groups, after applying the chi-square. (Table 1-5).

DISCUSSION

Haemorrhoids are the main cause of rectal bleeding and anorectal disorder in our community[13], but peoples are resistant to surgical procedures because of many myths and fear of operative interventions. So as a replacement lot of treatment options are introduced in variant stages of haemorrhoids, historically these procedures starts from the time of Hippocrates[14]. Its treatment options include excision, ligation, cautery and diathermy. Saluran introduced its treatment option as haemorrhoidectomy in 1888 which is modified in later years with Milligan-Morgan, Miles, Park and Ferguson[15].

In the era of 1965 another revolutionary change was made in management of bleeding haemorrhoids by rubber band ligature without any anesthetic assistance which was also modified in 1963 by Barron[16]. In this study we compare these two technique in terms of safety, efficacy, hospital stay and post operative complications. In our study there were 81.6% (n=218) males and 18.4% (n=49) females in group A, and 90.3% (n=241) males and 9.7% (n=26) females in group B and mean age was 49.01±2.04 years in group A and 37.81±2.83 years in group B, these findings are similar to previous study conducted by Saeed MT[11] in which male to female ratio was 3.3:1 and mean age was age 47±2 and 35±2 in group A and B respectively.

Misra et al[17] found mean age of 45.5±1 years. La Torre F et al[18] found mean age 42 years and Madoff et al[19] reported mean age 50.2±15 years in their studies .as described above rectal bleeding is common in our region we found in our study 81.6% (n=218) rectal bleeding in group A and 88.8% (n=237) in group B, in western society it was reported 90% almost same percentage. Similarly prolapsed haemorrhoids in western community was reported in 80% of patients and in our study 56.9% (n=152) in group A and 44.2% (n=118) in group B[20].

In our study it was noted as 2nd degree haemorrhoidsin 36.7% (n=98) patients and 3rd degree haemorrhoidsin 63.3% (n=169) patients, in group A. While, in group B, observed as 2nd degree haemorrhoids in 58.8% (n=157) patients and 3rd degree haemorrhoids in 41.2% (n=110) patients in a study Zolinger et al[21] found 2nd degree and third degree haemorrhoids in 51, 93% in group A and 29, 83% in group B. these results also comparable with our results.

Keeping all these variables Ali SA et al[22] conducted a study on this topic and reported that rubber band ligation is an effective and safe method of haemorrhoids management as compare to Milligan-Morgan. These results are also similar to our results.

Muazzam M et al[23] conducted a similar study and reported that rubber band ligation is safe reliable and effective procedure with minimum complications as compared to Milligan-Morgan technique for the management of haemorrhoids.

CONCLUSION

Results of our study concluded that Rubber band ligation is better choice for the treatment plan of haemorrhoids when evaluated in terms of complication rate and outcomes.

Author's Contribution:

Concept & Design of Study:	Ammara Bakhtawar
Drafting:	Ammara Bakhtawar
Data Analysis:	Ayesha Arshad
Revisiting Critically:	Muhammad Abubakre Khalid
Final Approval of version:	Ammara Bakhtawar

Conflict of Interest: The study has no conflict of interest to declare by any author.

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