

COMPARISON OF THE CONSEQUENCE OF RUBBER BAND LIGATION VERSUS MILLIGAN MORGAN HEMORRHOIDECTOMY IN 3RD DEGREE HEMORRHOIDS

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ABSTRACT

Background: Treatment possibilities vary according to patient's presenting complaints and stage of disease and range from topical applications and dietary modifications to office procedures like rubber band ligation and sclerotherapy to surgical management like hemorrhoidectomy and stapled anopexy. Among these procedures, rubber band ligation (RBL) and hemorrhoidectomy are the most frequently performed.

Objectives: To compare the outcome (in terms of post-operative pain and bleeding) of rubber band ligation versus Milligan Morgan hemorrhoidectomy in 3rd degree hemorrhoids.

Methods: Total 86 patients with 3rd degree hemorrhoids, 25-60 years of age of both genders were selected. Group A included the cases in which rubber band ligation was done while group B included the cases where Milligan Morgan hemorrhoidectomy was done. All the patients were assessed up to 72 hours for outcome (bleeding and post-operative pain).

Results: The mean age in group A was 38.58 ± 7.57 years and in group B was 38.21 ± 7.33 years. Out of 86 patients, 59 (68.60%) were males and 27 (31.40%) were females with ratio of 2.2:1. Patients with post-operative pain in Group A were 04 (9.30%) and in group B were 32 (74.42%) after hemorrhoidectomy (p-value = 0.0001). Post-operative bleeding was seen in 02 (4.65%) after rubber band ligation and in 12 (27.91%) after hemorrhoidectomy (p-value = 0.003).

Conclusion: This study concluded that the post-operative pain and bleeding is less after rubber band ligation in 3rd degree hemorrhoids as compared to Milligan Morgan hemorrhoidectomy.

Keywords: Rubber band ligation, Hemorrhoids, Bleeding.

How to cite this article: Nasim A, Ibrahim S, Jabbar N. Comparison of the consequence of Rubber Band Ligation versus Milligan Morgan Hemorrhoidectomy in 3rd degree hemorrhoids. Pak Postgrad Med J 2021;32(2): 67-70

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DOI: <https://doi.org/10.51642/ppmj.v32i02.423>

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INTRODUCTION

Hemorrhoids are defined as collections of submucosal, fibro vascular, arteriovenous sinusoids that are basically part of the normal anorectum.¹ In epidemiologic studies conducted in Korea, England, and Austria, 14 % of the population had hemorrhoids; however, many were without symptoms.^{2,3} Asymptomatic hemorrhoids do not need treatment. By contrast, an estimated 10 million

people in the United States present with symptoms of hemorrhoids, equivalent to a prevalence of 4.4 to 40.0%.⁴ The most common complaint correlated with hemorrhoidal disease is painless per-rectal bleeding during defecation without or with tissue prolapse. Other typical symptoms include anal pruritus or pain and a lump at the anal verge due to thrombosis or strangulation.² Internal hemorrhoids are further classified in 1985, based on the degree of prolapse into four grades.⁴ Grade I: No prolapse. Just prominent blood vessels; Grade II Prolapse upon bearing down but spontaneously reduce; Grade III: Prolapse upon bearing down and requires manual reduction; Grade IV: Prolapsed and cannot be manually reduced.⁵ Patients

with grade I and II internal hemorrhoids, lack advanced prolapse of the supporting sub epithelial tissue of hemorrhoidal cushions. Nevertheless, these patients may suffer acute attacks with severe uneasiness and bleeding.⁶ Although hemorrhoids are generally diagnosed in clinical practice, many patients are too uncomfortable to ever look for treatment. As a result, the true occurrence of pathologic hemorrhoids is not known.⁷ In addition, although a large portion of anorectal complaints are due to hemorrhoids, it's always necessary to rule out other more serious causes of gastrointestinal (GI) bleeding, before involuntarily attributing symptoms to hemorrhoids.⁸

Treatment options vary according to symptoms of the patient and grade of the disease and range from dietary adaptations and topical applications to office procedures like rubber band ligation and sclerotherapy to surgical procedure like hemorrhoidectomy and stapled anopexy.^{5,6} Among these hemorrhoidectomy and rubber band ligation (RBL) are the most commonly performed.⁷ Success rates of rubber band ligation (RBL) show little differences in populations, different geographic locations and medical centers, fluctuating from 80% to 90%.^{7,8,9} Overall, the least Success rate is 74% ,although some centers are even reporting success rates as high as 100%.^{8,9} For 3rd degree hemorrhoids, post op complications after hemorrhoidectomy such as recurrence and pain are significantly high.⁹ Post op results of Rubber band ligation (RBL) are comparable to or even better than hemorrhoidectomy. Less than 1% required hemorrhoidectomy after RBL.¹⁰ In a study, post-operative complications such as, pain was seen in 5.7% patients after rubber band ligation and in 91.4% after hemorrhoidectomy and bleeding was seen in 4.3% after rubber band ligation and in 25.7% after hemorrhoidectomy.¹¹

As post-operative pain and bleeding following hemorrhoidectomy are the most common patient complaints which not only affects the patients physically but also associated with high morbidity, so in this study, we had to compare the outcome (in terms of post-operative pain and bleeding) of rubber band ligation versus Milligan Morgan hemorrhoidectomy in 3rd degree hemorrhoids. Although, previous study has shown the rubber band ligation as the better option but the available data on this is very scarce and further studies are required on this. On the basis of these results, some practical recommendations can be made in our routine practice guidelines. These guidelines will be associated with not as much of post-operative pain and bleeding in order to reduce morbidity of our population.

METHODS

We did this study in the surgical unit- II Jinnah Hospital, Lahore from 1st January 2019 to 31th December

2019. It was randomized control trial. It was approved from ethical review board. The sample size was calculated using WHO calculator for two groups for as 86 (43 each) cases using 95% level of significance and 80% power. It was non probability consecutive sampling. All patients with 3rd degree hemorrhoids as per operational definition, male and female of age 25-60 years were included. Surgery was done under the effect of spinal anesthesia. All the procedures were performed by our consultant surgeons having at least three years of post-fellowship experience. Patients were allocated groups A & B randomly using lottery technique. Group A included the cases in which rubber band ligation was done while group B included the cases in Milligan Morgan hemorrhoidectomy was done. All patients were assessed up to 72 hours for outcome (post-operative pain and bleeding) as per operational definitions. Data was entered and analyzed by using SPSS version 20.0. Chi square was used to compare the result of both groups and p-value ≤ 0.05 was considered as significant.

RESULTS

Age varies from 25 to 60 years. Mean age was 37.36 ±7.39 years. Majority of the patients 45 (52.33%) were between 25 to 40 years of age as shown in (Table 1).

Table:1 Age distribution for both group (n=86)

Age (years)	Group A (n=43)	Group B (n=43)
25-40	22 (51.16%)	23 (53.49%)
41-60	21 (48.84%)	20 (46.51%)

Out of 86 patients, 59 (68.60%) were males and 27 (31.40%) were females with male to female ratio of 2.2:1 (Table 2).

Table:2 Gender distribution for both group (n=86)

Gender	Group A (n=43)	Group B (n=43)
Male	30 (69.77%)	29 (67.44%)
Female	13 (30.23%)	14 (32.56%)

Post-operative pain was seen in 04 (9.30%) patients after rubber band ligation and in 32 (74.42%) after hemorrhoidectomy (p -value = 0.0001). Post-operative bleeding was seen in 02 (4.65%) after rubber band ligation and in 12 (27.91%) after hemorrhoidectomy (p-value = 0.003) as shown in (Table 3).

Table:3 Comparison of outcome (in terms of post-operative pain and bleeding) of rubber band ligation (RBL) versus Milligan Morgan hemorrhoidectomy in 3rd degree hemorrhoids.

Outcome	Group A	Group B	p-value
Post-operative pain	04 (9.30%)	32 (74.42%)	0.0001
Post-operative bleeding	02 (4.56%)	12 (27.91%)	0.003

DISCUSSION

The treatment of hemorrhoids is for alleviating its symptoms.¹² Management include least invasive procedures like sclerotherapy, rubber band ligation, infrared photocoagulation and invasive surgical procedures like Milligan–Morgan and closed Ferguson in about 10% of cases.¹³ Rubber band ligation is the most commonly used procedure, because of its success, low post op complications rate and its short recovery time compare to the operative technique.¹⁴ We have conducted this study to compare the outcome (in terms of post - operative pain and bleeding) of rubber band ligation (RBL) versus Milligan Morgan hemorrhoidectomy in 3rddegree hemorrhoids.

In a study, post-operative pain was seen in 5.7% patients after rubber band ligation and in 91.4% after hemorrhoidectomy. Post-operative bleeding was seen in 4.3% after rubber band ligation and in 25.7% after hemorrhoidectomy.¹¹

In the series of Murie et al, post op pain was seen in 44 % of patients (36 % in R group and 52 % in H group), and in the study conducted by Vellacott and Hardcastle rate was (35 %).¹⁵⁻¹⁶

Law and Chu reported pain in 32% of patients who underwent triple RBL below the dentate line.¹⁷ In the study, done by Gupta more intensity of post op pain was observed with RBL as compared to infrared therapy, but there was less chance of recurrence in RBL.¹⁸ Tichikow et al reported severe pain in 7.5% of cases and recommended injection of local anesthetic agent into the hemorrhoid bundle.¹⁹ Wehrmann et al, reported postop pain in 25% of patients who went through RBL.²⁰

Most common disadvantage of rubber-band ligation is that it generally done by two operators (operator and assistant), one of them holds the proctoscope/anoscope and the other holds the grasping forceps and ligature. With passage of time different advance devices have been developed to obviate the need of operator.²¹ Some doctors mostly use two rubber bands instead of one to avoid slippage or breakage of rubber band and accomplish better strangulation of the hemorrhoidal mucosa. It is essential to apply the rubber band on the base of the internal hemorrhoid, as patient may feel some discomfort, if the rubber band is applied near the dentate line. Base of internal hemorrhoid is usually 1.5 to 2 cm proximally to the dentate line. In case of severe post op pain after rubber band ligation, rubber band can be removed.

Intra-operative or immediately after Procedure, severe pain is very rare, if it happens, it is usually due to inflammation, strangulation of the anoderm and edema of the area. Other causes must be rule out macroscopically by carefully examining the area. If the patient suffered with severe pain and anxiety, you should consider the general anesthesia to do more

thorough examination of the area. After removing the rubber band if no cause of pain or gross evidence of infection was found, the surgeon can re-try rubber band ligation and hold the mucosa away from the dentate line at a more proximal site. Appropriate dietary modification, bulking agents, stool softeners, mild analgesics and sitz baths are advised.²¹

Patient may suffer with moderate discomfort after the procedure for several days which is managed by mild analgesics, sitz baths and avoidance of hard stools. Other postop complications may include late hemorrhage (1 to 2 weeks after the procedure), severe pain, thrombosed external hemorrhoid, slippage of the rubber band, ulceration, pelvic sepsis, and extremely rare Fournier's gangrene.^{22,23} Rubber band ligation is usually contraindicated in patients who are taking anticoagulants, due to increased risk of delayed hemorrhage. These patients can be treated by other modalities such as infrared coagulation and sclerotherapy.

MacRae and McLeod did a meta-analysis to compare the treatment modalities for grades I to III hemorrhoids. Meta-analysis was conducted on Eighteen trials. The patients who went through hemorrhoidectomy had a better response to management than the response of patients who were managed with rubber-band ligation ($p = 0.001$), although post-op complications and pain were more in the hemorrhoidectomy group. Rubber-band ligation leads to better response as compared with sclerotherapy, and the risk of post-op complications were similar with both modalities. Patients require more therapy who underwent sclerotherapy or infrared coagulation as compared to those who were treated with rubber-band ligation ($p = 0.031$ and $p = 0.0014$, respectively).²⁴

A systematic review of three randomized trials with a total of 216 patients with different degrees of hemorrhoidal disease was published recently. It compared excisional hemorrhoidectomy with rubber band ligation.¹² The type of instruments used (diathermy, scissors, stapler, laser) and the technique of excising the hemorrhoidal tissue (open, semi closed, closed) were included. This review discovered significant heterogeneity between the studies regarding description of postoperative pain, undergoing hemorrhoidectomy. Hemorrhoidectomy usually result in overall greater rate of complication. Although statistically there was no significant variance in the occurrence of urinary retention, anal stenosis and hemorrhage. Patient's satisfaction level was comparable in both groups. In the Conclusion of this systemic review, the patient with grade III hemorrhoidal disease has a better long-term efficacy with hemorrhoidectomy as compared to rubber-band ligation, but at the expense of more complications, postoperative pain and more time off work.¹¹

CONCLUSION

The RBL (rubber band ligation) is a competent and meek out patient's technique for symptomatic 3rd degree hemorrhoids with least post-op problems. RBL is consistent and harmless technique with little morbidity and no usage of any numbing medications.

ETHICAL APPROVAL

The study was approved by the Ethical Review Board of Allama Iqbal Medical College / Jinnah Hospital, Lahore via Ref No. 82/27/05/2021/S2 ERB Dated: May 27, 2021.

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