

A Comparative Study between Laser Haemorrhoidectomy and Milligan - Morgan Haemorrhoidectomy in the Treatment of Grade III and Grade IV Piles

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How to cite this article: Pradeep Balineni, Rajesh Jasti, K V Teja Reddy, Abhilash G, Pawan Kumar Naik. A Comparative study between laser haemorrhoidectomy and milligan - morgan haemorrhoidectomy in the treatment of grade III and grade IV piles. . International Journal of Contemporary Medicine Surgery and Radiology. 2022;7(1):A13-A16.

A B S T R A C T

Introduction: Haemorrhoids is one of the most common ano rectal conditions, mostly affecting middle aged males. With only 4% of the cases being symptomatic, subjective perception of symptoms drives to the need for surgery. Various surgical and non surgical techniques are available in the treatment of haemorrhoids as open haemorrhoidectomy Milligan Morgan technique (British) which is mostly adapted, closed haemorrhoidectomy Ferguson technique (USA) and laser haemorrhoidectomy (LHP), rubber band application, cryotherapy, injection sclerotherapy, infra red ablation, diathermy coagulation. When left untreated haemorrhoids would lead to complications like fibrosis, strangulation, ulceration and portal pyemia. Study aimed To asses the therapeutics superiority between open Haemorrhoidectomy (MM) and LHP.

Materials and Methods: In this cohort study all the patients who presented to surgery department of Mamata academy of medical sciences with grade III and grade IV haemorrhoids during the period of January 2018 to January 2020 were included. Patients with recurrences, regular use of immunosuppressors or pain killers, on blood thinners, other anal conditions such as tuberculosis or crohns disease are excluded. Patients are randomly allotted into laser and open haemorrhoidectomy groups. All the data has been collected and analysed as range, mean and standard deviation with t test.

Results: All the 80 patients participated in the study are divided into two groups with 40 patients each for laser and open haemorrhoidectomy. Laser haemorrhoidectomy proved to efficacious with less painful, low bleeding(p value <0.001), less operative time (p value <0.05), less use of post op analgesia (p value <0.05) and decreased hospital stay (p value <0.001). Laser haemorrhoidectomy also had lower complications such as abscess, bleeding, edema, urinary retention, fistula, stricture, recurrence, incontinence

Conclusion: We conclude our study by stating that although laser haemorrhoidectomy carries certain limitations such cost and not applicable in thrombosed piles, but when available and indicated should be favoured as it has many advantages as less painful, low bleeding, early recovery, decreased post op analgesia use, low operative time, etc.,

Keywords: Laser Haemorrhoidectomy, Milligan, Haemorrhoidectomy, Grade III and Grade IV Piles

INTRODUCTION

Haemorrhoids is one of the most common ano-rectal disease with a prevalence of 2.9%-27.9%^{1,2,3}. They are mostly seen in middle aged (45-65 yrs) males². Ano-rectal cushions along with internal anal sphincter would provide support and also help in maintaining continence³. Haemorrhoids are prolapse of anal mucosa and downward displacement of suspensory (trietz) muscle³. Only about 4% of the cases are symptomatic^{1,2}, most common presenting symptoms would be bleeding per rectum and prolapse³. Haemorrhoids are essentially graded into 4 grades grade1 no prolapse prominent blood vessels, grade 2 prolapse emerges with strain but spontaneously reduces, grade 3 prolapse emerges with strain and needs to be pushed back, grade 4 prolapse emerges

and cannot be reduced or pushed back. When left untreated can lead to complications like bleeding, thrombosis, fibrosis, strangulation, ulceration, suppuration and portal pyemia¹.

Subjective perception is the main need for management, grade of the haemorrhoid decides the mode of management. Various non surgical methods available are rubber band application, cryotherapy, injection sclerotherapy, infra red ablation, diathermy coagulation¹ all these can be done as opd procedures without anaesthesia². Indications for surgery would be grade 3-4 disease, hypertrophied papillae, extensive thrombosis and pain, associated fissures and recurrences³. Various surgeries available are open haemorrhoidectomy Million Morgan technique (British) which is mostly adapted, closed haemorrhoidectomy Ferguson technique (USA) and laser haemorrhoidectomy (LHP). Post operative

pain and other complications like bleeding, abscess, urinary retention, fistula formation, fissure, stenosis and incontinence have led to the development laser haemorrhoidectomy^{1,2,5}. Comparatively LHP has advantages of less painful, low blood loss, accelerated wound healing, faster return to work^{3,4,6}.

Aims and objectives

- To assess the therapeutics superiority between open Haemorrhoidectomy (MM) and LHP.
- To compare the post operative complications between the procedures
- To define the therapeutic indications for both the procedures

MATERIAL AND METHODS

In this cohort study that was conducted in the department of General surgery, Mamata academy of medical sciences from November 2019 to June 2021, a total of 80 patients were involved. All the patients with symptoms of bleeding per rectum and prolapse went through a careful history taking and per rectal examination. After taking a detailed written informed consent from the dean, ethics committee of institution and patients, those patients diagnosed with grade 3 and grade 4 haemorrhoids were included in the study, except for those who got excluded by exclusion criteria which are recurrences, regular use of immunosuppressors or pain killers, on blood thinners, other anal conditions such as tuberculosis or crohns disease.

Patients were randomly assigned randomly in to both the groups i.e. LHP and open groups. Under spinal anaesthesia patient in lithotomy position after per rectal examination and proctoscopy, 'V' incision is made at the muco-cutaneous junction prolapsed tissue is dissected of the sphincter

complex pedicle is ligated with absorbable suture and excised and wound is left open in open haemorrhoidectomy. In LHP after placing patient in lithotomy position a stab incision is made and the holmium laser probe is introduced parallel to the so that not to injure the mucosa, after reaching up to the dentate line laser shots are released in a pulsed manner for 10 seconds each so that to minimise the damage to peri arterial healthy tissue.

Various variables such as post operative pain, operative time, blood loss, hospital stay are recorded. Pain score is recorded using a visual assessment scoring where 0 is no pain and 10 is extremely painful. All the data recorded are analysed with range, mean and standard deviations. T-test is used to draw the statistical significance of the analysed data.

RESULTS

In this study majority of patients were middle age group between 30-50 years (71%), <30 years (10%) and >50years (19%) with a male sex dominance of 68%. Bleeding per rectum is the main presenting complaint with 62% of patients other complaints included prolapse (21%) and painful defecation (17%). Almost all the patients included has a history of constipation other co-morbid conditions noted in the study hypothyroidism (30 patients), diabetes mellitus (10patients) and hypertension (6patients).

When compared to patients who have undergone open procedure patients who had LHP showed less pain immediate post op period with 5 in 0-2 pain score to 0 in open group, 35 in 2-6 score in comparison to 23 in open group and 0 patients above 6 when 17 in the open group. LHP group showed better pain tolerance after 1 month of follow up also with all 40 patients having 0-2 pain score on vas system whereas in open group 31 patients had 0-2 and 9 had 2-6 score. Other parameters such as operative time p value <0.05, blood loss p value <0.001, post op analgesia p value <0.05, hospital stay p value <0.001 also statistically proved LHP to be a better alternative to conventional and well adapted open procedure. Early complications such

Pain (VAS)	Post op day 1		Post op day 30	
	LHP	MM	LHP	MM
0-2	5	0	40	31

Factors	LHP	MM	P value
Op time	15.60 +_ 3.8	32.50 +_ 5.6	<0.05
Blood loss	12.10+_ 2.3	25.60+_ 3.5	<0.001
Post op analgesia	2.76+_ 2.10	7.35+_ 2.86	<0.05
Hospital stay	10.80+_ 1.06	29.25+_ 3.8	<0.001

Early complications	LHP	MM
Abscess	0	2
Bleeding	1	6

Edema	LHP	MM
Urinary retention	0	4
Late complications		
Fistula	0	1
Stricture	0	1
Recurrence	0	0
Incontinence	0	1

Study	Advantages of LHP	No difference	Disadvantages of LHP
Sandra andkeshavarz ⁹	<ul style="list-style-type: none"> Less painful Low bleeding Hospital stay Post op analgesia 	<ul style="list-style-type: none"> Urinary retention Wound infection Regression of haemorrhoids Improvement of clinical signs after 6 months 	
Naderan et.al ¹⁰	<ul style="list-style-type: none"> Operative time Less painful Regression of haemorrhoids 		Thrombosis of external haemorrhoids
Maloku et.al ²	<ul style="list-style-type: none"> Less painful Operative time 		
Jahanshahi et.al ¹¹	<ul style="list-style-type: none"> Less painful Low bleeding Anal Stenosis Recurrence 		
Karahaliloglu et.al ¹²	<ul style="list-style-type: none"> Less painful Faster recovery 		
Plapler et.al ¹³	<ul style="list-style-type: none"> Less painful 		

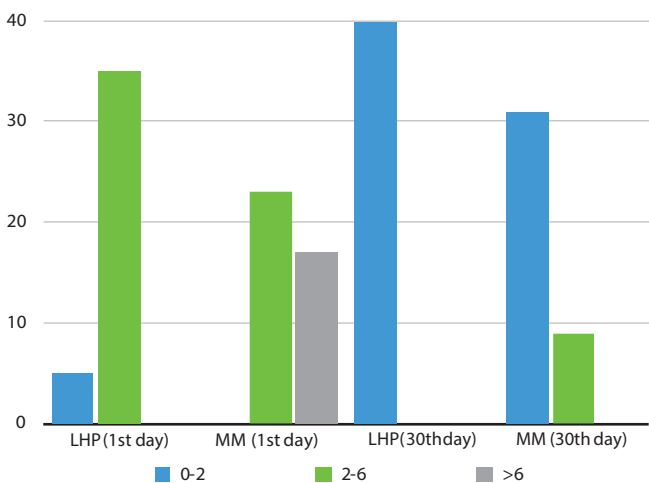


Figure-1: Pain score

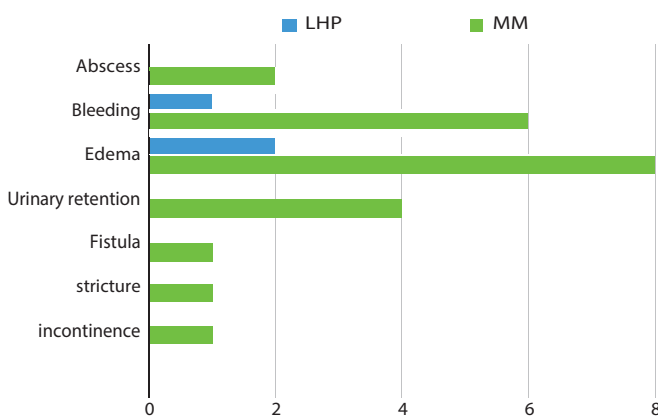


Figure-2: Complications

as abscess, bleeding, edema, urinary retention and late complications as fistula, stricture, recurrence, incontinence were also compared which also proved LHP to be a low risk procedure in comparison to open procedure.

DISCUSSION

In cases of haemorrhoids need for management is mainly driven by subjective perception of symptoms, mode of

management by the grade of haemorrhoids^{2,3,7}. Due to the availability of many different modalities of management there lies a confusion in which method to be adopted². Post operative pain is the main reason for patients not to seek any intervention³. Though open haemorrhoidectomy is the most widely adapted method of treatment is more painful, whereas laser procedure is less painful and also has early recovery^{2,8}. This study had showed the mean operative time is lesser in laser procedure (15.60±3.8) compared to open procedure (32.50±5.6). Intra operative blood loss was also lower in the laser group (12.10±2.3) when compared to open group (25.60±3.5). Patients who underwent laser haemorrhoidectomy (2.76±2.10) needed lesser post op analgesia when compared to open surgical group (7.35±2.86). The mean hospital stay is shown to lower in the laser haemorrhoidectomy group (10.80±1.06).

In this study, three patients treated with laser haemorrhoidectomy had early complications bleeding in 1 patient and edema in 2 patients all 3 patients were treated by conservative method with packed dressing and anti inflammatories. Where as 17 patients had early complications in open group 1 patient had post operative bleeding followed by abscess, 2 patients had edema and urinary retention, 5 had bleeding, 6 patients had edema, 2 patients had urinary retention and one had abscess only. Out of 17 patients 4 (2 abscess and 2 bleeding) have been treated surgically others by conservative management. There were no cases of recurrences in the study. There were no late complications at the end of one month follow up in the study. There was one case of fistula in ano and one case of anal stricture in open group which were dealt surgically by fistulectomy and spinctherotomy respectively. There was one case of anal incontinence which was treated conservatively with physiotherapy and bulk producing foods.

Many studies also had similar results as produced in this supporting LHP to be more efficacious and with less complications in regards to pain, bleeding, operative time, early recovery, etc.

CONCLUSION

We conclude our study by stating that although laser

haemorrhoidectomy carries certain limitations such as cost and not applicable in thrombosed piles, but when available and indicated should be favoured as it has many advantages as less painful^{2,6,8}, low bleeding, early recovery, decreased post op analgesia use, low operative time, etc.¹.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 10-02-2022; **Accepted:** 08-02-2022; **Published online:** 30-03-2022