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Comparative study between Milligan Morgan Haemorrhoidectomy and Laser Ablation for the Management of third and fourth Degree of hemorrhoids

General Surgery

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ABSTRACT

Background: In were comparative study, using a hemorrhoid laser process (LHP) was found to be more successful, easy to use, noninvasive, non-toxic, painless, and extremely effective. The hemorrhoid laser treatment (LHP) were a new technique for treating hemorrhoids that involves laser coagulation of the rectal artery flow supplying the hemorrhoid plexus.

Aim of the work: to compare the safety, efficacy, and benefits and complication between Laser-operative technique and the open-operative technique (Milligan Morgan) for the treatment of patients suffering from haemorrhoids of third and fourth degree.

Patients and methods: Between November 2019 and September 2021, thwere research was carried out in the department of general surgery at Al-Azher university Hospital in Cairo for boys and Luxor International Hospital. In thwere research, 30 patients were included with third and fourth degree of hemorrhoids. The included patients were partitioned into two groups. In Group (I): included fifteen patients that managed by using LHP operative technique, and Group (II): included fifteen patients were managed by using Open-Milligan Morgan operative technique. Appraisal of both operative techniques applied of the procedure timing, operative and postoperative bleeding, post-operative pain, and return to normal life were all assessed using a visual analogue scale.

Results: There were significant differences in operating time, postoperative bleeding, and early postoperative pain. In terms of early postoperative pain, there were statistically significant differences between the two groups (P value less than 0.001). The mean operational time for LHP was 15.9 ± 5.9 minutes, compared to 25.9 ± 4.7 minutes for the milgan and morgan method ($p<0.0001$).

Conclusion: LHP had greater effectiveness than the open approach concerning Postoperative pain, bleeding and operative time, recovery and recurrence.

Keywords: *Laser Hemorhoidoplasty; Open hemorrhoidectomy; post-operative pain; third and fourth degree.*

INTRODUCTION

Hemorrhoids have a much higher incidence than rectum and colon diseases worldwide.[1] Today, their prevalence were estimated to be between 2.9 and 27.9% among the worldwide population, of which 4% are symptomatic.[2] Based on the Gauss method, the highest incidence were present in patients aged between 45 and 65 years.[3] Men are more often affected than women. According to world health organization in 2021, stated that the prevalence of hemorrhoids in Egypt represents 18% between male and female with a varied range age.[4]

Hemorrhoids are fibrovascular cushions containing arteriovenous communications present in the sub-epithelial space of the anal canal.[5] The standard classification for hemorrhoids were as follows: first degree=bleeding, second degree=protrusion with spontaneous reduction, third degree= protrusion requiring manual reduction, and fourth degree=permanent protrusion of hemorrhoids.[6]

Bleeding, were the principal and earliest symptom.[7] The nature of the bleeding were characteristically separate from the motion and were seen either on the paper for wiping or as a fresh splash in the pan.[8] Very rarely, the bleeding may be sufficient to cause anemia. Pain were not commonly associated with the bleeding and its presence should make the clinician alert to the possibility of another diagnosis; however, pain may result from congestion of pile masses below a hypertonic sphincter. Piles associated with bleeding alone are called first-degree hemorrhoids.[9]

One of the main symptom of third degree hemorrhoids were bright red blood covering the stool or found on toilet paper after defecation or in the toilet bowl.[10] Other symptoms include sensation of a hard lump around the anus, protrusion, and/or mucous discharge. Frequent rubbing of the anus causes exacerbation of the symptoms with vicious

cycle of irritation, itching, and liable to thrombosis, causing severe pain.[11]

The most recent laser ablation were now considered the minimally invasive procedure for the treatment of hemorrhoids. Carbon dioxide, argon, and Nd : YAG lasers are the commonest lasers used in medicine, such as in laser hemorrhoidoplasty (LHP).[12]

Patients may complain of true ‘piles', lumps that appear at the anal orifice during defecation and which return spontaneously afterwards (second-degree hemorrhoids), piles that have to be replaced manually (third-degree hemorrhoids), or piles that lie permanently outside (fourth-degree hemorrhoids).[13]By thwere stage, there were often a significant cutaneous component to the pile masses, which arise through repeated congestion and edema.[14]

In addition to the main symptoms of pain and prolapse, patients may complain of anal irritation, which may occur because of mucus secretion from the caudally displaced rectal mucosa, minor leakage through a now imperfect anal seal or difficulties in cleaning after defecation because of the irregularity of the anal verge.[15]

PATIENTS AND METHODS

Preoperative Assessment

These study included thirty patients with third and fourth degree hemorrhoids. All patients underwent hemorrhoidectomy through open approach (Milligan and Morgan)and laser ablation technique) in Al-Azhar university hospitals (Al-Hussein Hospital) and Luxor International Hospital. According to the patient selection, all thirty patients were divided in two comparative groups as follow: **Group A:** - fifteen patients undergoing Conventional hemorrhoidectomy. **Group B:** - fifteen patients undergoing intra haemorrhoidal Laser ablation. The inclusion criteria were Age more than 15 years old, failure of conservative, non-surgical treatment and Third and Fourth degree hemorrhoids. The exclusion criteria were age less than 15, first, second-degree hemorrhoids and complicated hemorrhoids. Patients with debilitating diseases such as liver cirrhoswere and bleeding tendencies. Patients with previous anal surgeries. Patients with hemorrhoids accompanied by other anal conditions such as fissure, fistula, or anal stenosis, impaired anal sphincter function or fecal incontinence. Patients with recurrent hemorrhoids and Patients with thrombosed hemorrhoids. The laser technique were applied by using (Biolitec AG, Germany) **(Figure 1).**

Fig. 1: Biolitec AG, Germany.Operative Techniques

Group I: Spinal anesthesia was given to all patients. The patient is placed in lithotomy position, sterilization done with betadine. Delivery of hemorrhoid with artery forceps lubricated proctoscopy was introduced into the anus. This approach has been started via a small incision at the mucocutaneous junction the laser fiber was introduced into the hemorrhoidal plexus taking into consideration that the fiber should be parallel to the anal canal to avoid injury or burn of the mucosa or internal sphincter. Using a 1470 nm diode laser, laser shots were delivered through the optic fiber in a pulsed fashion for the reduction of favorable degeneration of the per-arterial healthy tissue. The limits of shrinkage can be controlled by the duration and power of the laser beam. Via the optic fiber, laser shots were generated at a power of 8 W with the duration of 7s. Each shot followed by a pause of 1 s caused shrinkage of tissues approximately up to the depth 5 mm at the end of each hemorrhoid, an ice finger was applied intra anally for 1–2 minutes to minimize the harmful effect of heat. This procedure was repeated for each hemorrhoid.

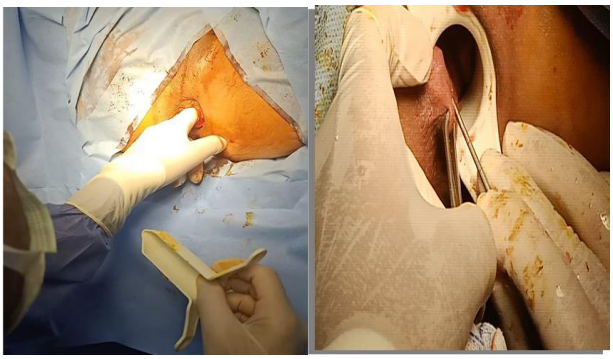

Fig. 2: Introduction of laser ctheter(probe) at mucocutaneous junction

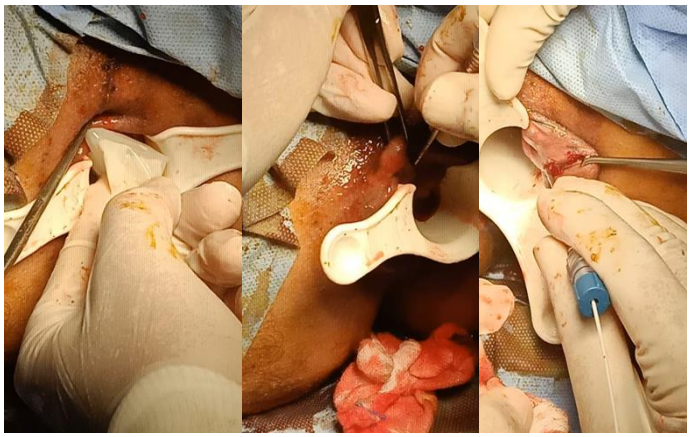

Fig. 3: ice finger was applied intra anal after laser ablation

Group II: Spinal anesthesia was given to all patients. The patient were placed in lithotomy position, sterilization done with betadine, the sphincter were gently stretched. The skin covered

component of each of the main pile were seized with an artery forceps and retracted outwards causing lower poles of the mucosal-covered component to protrude to a varying extent according to the size of the hemorrhoidal tissue. Another artery-grasped forceps the mucosal component of each pile grasped then, drawn downwards and outwards. The traction were maintained until pink mucosa appears which means that piles have been drawn down to their maximum extent so that ligature were placed at the upper pole rather than middle. The two forcipes are drawn and a V-shaped incision in anal and perianal skin were done with a pair of blunt scissors. The limbs of the V cross-mucocutaneous junction but don‘t extend into mucosa. The hemorrhoid tissue were dissected from internal sphincter either by scissors or by diathermy. Muscular were submucosa were seen entering venous plexus, its strands are not divided and only a slight nick in mucosa above and below were made to narrow the mucosal pedicle before applying the ligature, here it were preferable to free the plexus by dividing these strands. Proceeding upwards, the underlying mucosa must be divided on either side to the pedicle converging toward its apex. Trans fixation of the apex were done using absorbable vicryl zero. The isolated hemorrhoid tissue were then excised a few millimeters below apical ligature. The trans fixation suture remains long for further inspection The procedure were repeated in exactly the same manner for each of the other positions. It were important to ensure intact bridge of skin and mucosa between each excised hemorrhoid to prevent anal stenoswere at the end of the operation then cut short. The procedure were repeated in exactly the same manner for each of the other positions. It were important to ensure intact bridge of skin and mucosa between each excised hemorrhoid to prevent anal stenosis.

Fig. 4: Male patient 27 years old with third degree Piles

Fig. 5: Delivery of the hemorrhoidal mass and Appling artery forceps to the base of the hemorrhoid

Fig. 6: Trans fixation of the pedicle by vicryl

RESULTS

Patient Demographic

All operation were performed under full anesthesia, laser ablation and Milligan Morgan operative techniques used for the treatment of grade III and IV hemorrhoids.

Surgical Technique:

Group A: Laser ablation

Group B: Milligan Morgan

Comparison between sex of included patients and applied operation techniques

This study included 30 patients, of which 17 (57.2 %) were males and 13 (42.7%) were females. The *P* value was 0.9306 by chi-square test among the laser ablation and milligan morgan, which was considered non-significant.

Parameter	Laser Ablation	Milligan Morgan	P Value
		Sex	
Male	7(44 %)	9 (57 %)	P < 0.851 NS
Female	8 (56%)	6 (43 %)	P < 0.994 NS

The p value was calculated by X2 test. ANOVA analysis of variance, (S) significance and (NS) non-significance.
Table : Sex distribution and operative techniques

Difference	2.000
Standard Error	22.744
95% CI	-44.5899 to 48.5899
T-Statistic	0.088
DF	28
Significance Level	*P* <0.9306

The differences between the two observed mean between male and female among variant age. A significance value (P-value) and 95 % confidence interval (CI) of the difference is reported. The P-value is the probability value of obtaining the observed difference between male and female were not statistically difference with significance level P <0.9306.

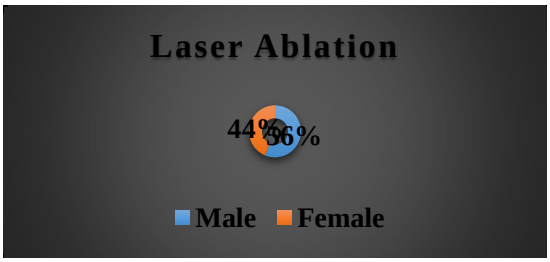

Fig. 7: Percentage of Male and Female among applied Laser Ablation Operative Technique

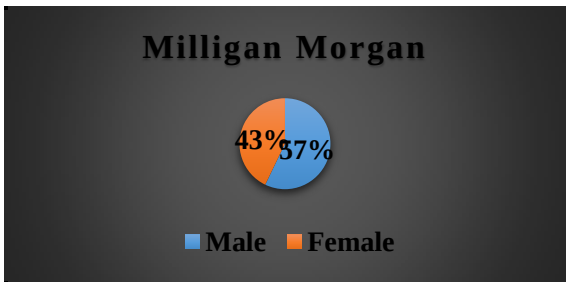

Fig 8: Percentage of Male and Female among applied Milligan Morgan Operative Technique

Compare between Age of included patient and operative time, Hospital stay and Return to Activity

The age among laser ablation has a mean of 40.4 ± 8.8 years and Milligan Morgan has a mean of 40.7 ± 8.8 years, The P value was 0.986 by ANOVA test among laser ablation and milligan morgan operative techniques, which was considered non-significant.

The mean operative time in Laser ablation was 15.9 ± 5.9 minutes and in milligan morgan was 25.9 ± 4.7 minutes. The P value was less than 0.001 by ANOVA test, which is considered highly significant. The P value of post-hoc test regarding laser ablation and milligan morganm was <0.0001, which was considered significant.

The mean hospital stay in laser ablation was 0.7 ± 0.2 days and in milligan morgan was 1.1 ± 0.2 days. The P value was less than 0.001 by ANOVA test, which is considered highly significant. The P value of post-hoc test regarding laser ablation and milligan morgan was less than 0.001, which was considered highly significant..

Parameter	Laser Ablation		Milligan Morgan		P Value
	Mean	SD	Mean	SD	Significance
Age	40.4	8.8	40.7	8.8	0.986 NS
Operative Time	15.9	5.9	25.9	4.7	< 0.0001 S
Hospital Stay	0.7	0.2	1.1	0.2	< 0.0001 S

ANOVA analysis of variance, (S) significance and (NS) non-significance.

Table 2: Comparison between parameters and Operative Techniques

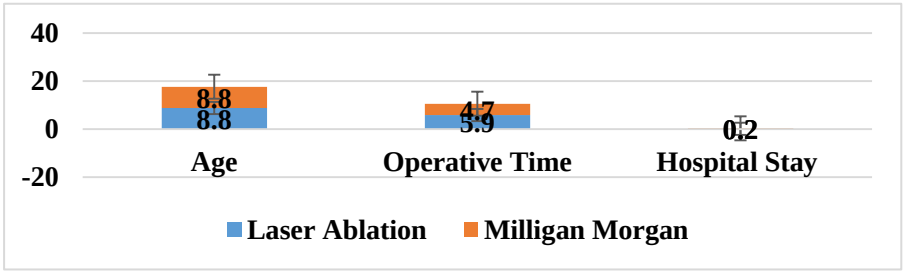

Fig 9: Operative Techniques among age, operative time and hospital stay

Degree of Hemorrhoids and Operative Techniques

This study included 30 patients, 3rd III degree of hemorrhoids was 13 (65%) for laser ablation and 7 (35%) for milligan morgan for operation techniques. 4th degree of hemorrhoids was 2 (20%) for laser ablation and 8 (80%) for milligan morgan for operation techniques. Post-operative bleeding was zero for laser ablation and 4 (100%) were milligan morgan. The P value was 0.341 by chi-square test for laser ablation and 0.211 by chi-square test for milligan morgan, which was considered not statistically significant.

Operation Technique	Laser Ablation (N= 15)	Milgan Morrigan (N= 15)	P Value
	Degree of Hemorrhoids		
3rd (III)	13 (65%)	7 (3/5%)	0.341
4th (IV)	2 (20%)	8 (80%)	0.211

ANOVA was found to be less than 0.001 in laser ablation and milligan morgan, which was considered statistically highly significant.

Table 3: Comparison between study group and study parameters

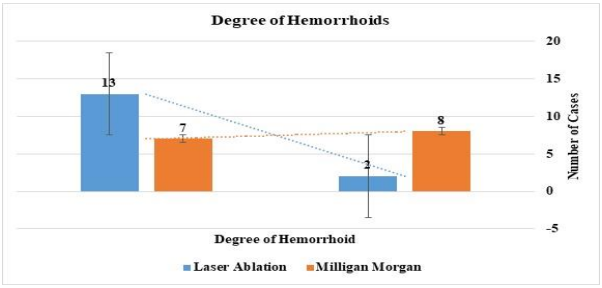

Fig.10: Degree of Hemorrhoids and Operative Techniques

Comparison between Pain visual scale score on day (1), day (8) and day (21).

Postoperative pain was evaluated using the VAS 0–10, where 0–1=no pain, 1.1–3=low pain intensity, 3.1–7=pain of medium intensity, 7.1–9=pain of high intensity, and 9.1–10=strong and unbearable pain. The VAS protocol was performed on day 1, day 8 and day 21 after surgery. For day 1, day 8 and day 21, the P value was less than 0.001 by ANOVA test among laser ablation and Milligan Morgan, which was considered statistically highly significant. The P value by post-hoc test was found to be less than 0.001 between each pair of laser ablation and milligan morgan operative techniques, which was considered statistically highly significant.

Parameter	Milligan Morgan		Laer ablation		P Value
	Mean	SD	Mean	SD	Significance
Day 1	6.9	1.1	4.5	0.8	< 0.0001 S
Day 8	5.2	0.9	2.5	0.8	< 0.0001 S
Day 21	1.2	0.7	0	0	< 0.0001 S

ANOVA analysis of variance, (S) significance and (NS) non-significance.

Table 4: Pain visual analog scale score (VAS score) on day 1, 8 and 21

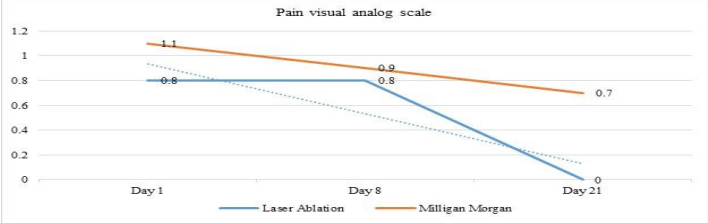

Fig. 11: Postoperative VAS score in Milligan Morgan and Laser Ablation operative techniques on day 1, day 8 and day 21. Repeated measure ANOVA was found to be less than 0.001 in laser ablation and Milligan Morgan, which was considered statistically highly significant.

Operative and Post-Operative Bleeding

This study included 30 patients, of which Zero were laser ablation and 3 (100%) were Milligan Morgan through operative bleeding. Post-operative bleeding was zero for laser ablation and 4 (100%) were Milligan Morgan. The P value was 0.0001 by chi-square test among the laser ablation and Milligan Morgan, which was considered statistically significant.

Parameter	Laser Ablation	Milligan Morgan	P Value
Operation Bleeding	0 (Zero %)	3 (100 %)	P < 0.0001 S
Post-Operative Bleeding	0 (Zero %)	4 (100 %)	P < 0.0001 S

ANOVA was found to be less than 0.001 in laser ablation and milligan morgan, which was considered statistically highly significant.

Table 5: Comparison between operative and post-operative bleeding

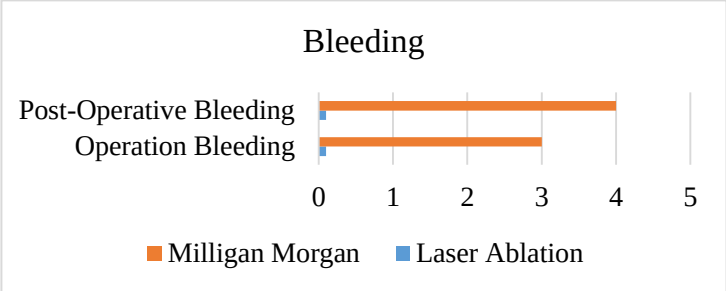

Fig 12: Bleeding rate among operative techniques and through/post-operative bleeding

Compare between operative techniques and degree of hemorrhoids

The recurrence after 6 month in laser ablation was 2 cases in 4th IV degree and Zero in the 3rd III degree while in Milligan Morgan was Zero in 3rd III and 4th IV degree of hemorrhoids. The P value was less than 0.001 by ANOVA test, which is considered highly significant. The P value of post hoc test regarding laser ablation and Milligan Morgan was less than 0.001, which was considered highly statistically significant.

Operation Technique/ Degree	3rd III	4th IV	P Value
Laser Ablation (N= 15)	Zero	2	0.0001 S
Milligan Morgan (N= 15)	Zero	Zero	0.0001 S

The p value was calculated by ANOVA test. Post-hoc test was applied in comparison between laser ablation and milligan morgan operative techniques. ANOVA analysis of variance, (S) significance and (NS) non-significance.

Table 6: Operative Techniques and Degree of Hemorrhoids

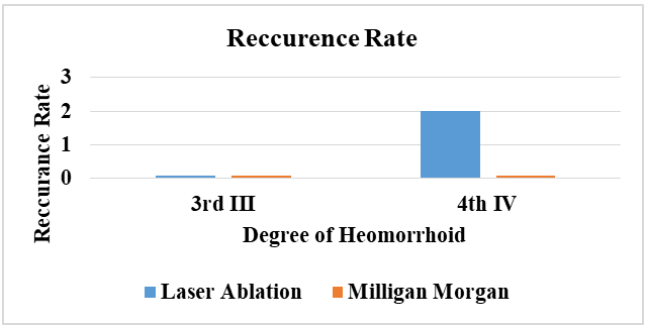

Fig.13: Recurrence rate among operative techniques and degree of hemorrhoids

Recovery and Back to work in Operative Techniques

This study included 30 patients, divided into two groups; Group I (LA): included 15 for laser ablation and Group II (MM): included 15 for Milligan Morgan operative techniques. Recovery and back to normal life in Laser ablation were after 1 week in the completely included participant group. These results represents statistically significant < 0.0001 P value. However, in Milligan Morgan operative technique, one case recover after 1 week, six cases recovered after 2 weeks, 6 cases recovered after six weeks and two cases recovered after 4 weeks. These results represents statistically non-significant < 0.0971 P value

Parameter	Recovery				P Value
Recovery/Week	**1 week**	**2 weeks**	**3 weeks**	**4 weeks**	**Significance**
Laser Ablation	15	0	0	0	< 0.0001 S
Milligan Morgan	1	6	6	2	< 0.0971 S

Table 7: Recovery and back to normal life after Operative techniques

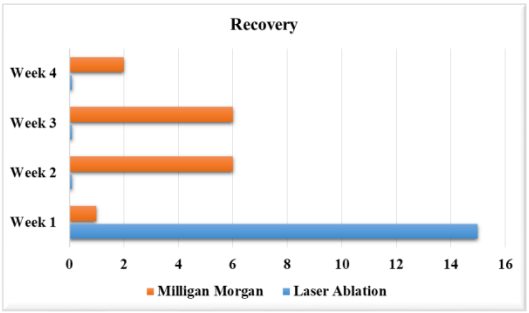

Fig.14: Recovery per week between Milligan Morgan and Laser Ablation Techniq

DISCUSSION

Laser Hemorhoidoplasty has been available as a new modality of minimally invasive procedure alternative treatment of advanced hemorrhoid problems. This technique is newly practiced in Egypt.[16] For the satisfaction of our knowledge, few studies have discussed this area of research involving laser hemorhoidoplasty for management of third- or fourth-degree piles.[17]

The need for management for hemorrhoids is primarily based on the subjective perception of the severity of presentations and the challenge of management is determined on the conventional degree of hemorrhoids, which is not related to the severity of symptoms.[18] Variations of management approaches have delivered confusion in the decision about the effective management modalities. So that the optimum management modalities remain unanswered despite most of the procedures in use being subjected to randomized assessment. Generally, an uncomplicated hemorrhoidectomy is satisfactory on non-surgery or operation for both, patient and surgeon.[19]

Open hemorrhoidectomy is the most widely accepted technique in the treatment of symptomatic patients with hemorrhoids. However, open hemorrhoidectomy is related to considerable complications which include postoperative pain, blood loss and wound sepsis that may lead to prolongation of hospitalization.[20]

The pain scores at this current study were considerably low in LA patients compared with open hemorrhoidectomy procedure group, in the early postoperative period after VAS a score was 5 versus 0 for score 0-1, 15 versus for score 2-5 and 0 versus 2 for score above 5 in the respective groups. Pain that occurs postoperatively is the most critical drastic effect that disturb the patients and make them reluctant to surgical procedures.[21] This study confirmed that LA is a secure procedure accompanied by much less postoperative pain. Also, Laser hemorhoidoplasty is accompanied with much less operative time compared with open surgical

hemorrhoidectomy, which is better for symptomatic cases with third- and fourth-degree piles

This study included 30 patients, of which 17 (57.2 %) were males and 13 (42.7%) were females. The *P* value was 0.9306 by chi-square test among the laser ablation and Milligan Morgan, which was considered non-significant. The differences between the two observed mean between male and female among variant age. A significance value (P-value) and 95 % confidence interval (CI) of the difference is reported. The P-value is the probability value of obtaining the observed difference between male and female were not statistically difference with significance level *P* <0.9306.

According to previous study stated that the study included 50 patient of both gender in male were (76.3%) while in female (23.8%).[22] This result is not statistically significant with our study results. However, another study mentioned that the study included 100 patient in both gender were 18.5 % in males and 81.5 % in females, this result were statistically significant with our results.[23] Moreover, compared the percentage of male and females found significant difference between them which was in agreement with similar results.[24]

The age among laser ablation has a mean of 40.4 ± 8.8 years and Milligan Morgan has a mean of 40.7 ± 8.8 years, The *P* value was 0.986 by ANOVA test among laser ablation and milligan morgan operative techniques, which was considered non-significant. This was in agreement with the data collected.[25]

The mean operative time in Laser ablation was 15.9 ± 5.9 minutes and in milligan morgan was 25.9 ± 4.7 minutes. The *P* value was less than 0.001 by ANOVA test, which is considered highly significant. The *P* value of post-hoc test regarding laser ablation and milligan morganm was <0.0001, which was considered significant. These results were in concordance with a previous study.[26]

This was in agreement with similar results. Moreover, there was a significant difference between LA and MM in favor of operative technique. There was no significant difference between LA and MM, although the laser technique was somewhat faster. This was in agreement with previous results, with similar results.[27] Moreover, compared LA and MM found significant difference between them regarding operative time, with much shorter time in the laser group.

The mean hospital stay in laser ablation was 0.7 ± 0.2 days and in Milligan Morgan was 1.1 ± 0.2 days. The *P* value was less than 0.001 by ANOVA test, which is considered highly significant. The *P* value of post-hoc test regarding laser ablation and Milligan Morgan was less than 0.001, which was considered highly significant. This can be attributed to the fact that patients had less postoperative pain requiring analgesia with less postoperative bleeding requiring hospital admission, as will be clarified later.

The mean time to return to activity in laser ablation was ٠.7 ± 0.2 days and in Milligan Morgan was 1.1 ± 0.2 days. The *P* value was less than 0.001 by ANOVA test, which is considered highly significant. The *P* value of post hoc test regarding laser ablation and Milligan Morgan was less than 0.001, which was considered highly significant. These results are in concordance with previous study.

The degree of hemorrhoids, 3rd III degree of hemorrhoids was 13 (65%) for laser ablation and 7 (35%) for milligan morgan for operation techniques. 4th degree of hemorrhoids was 2 (20%) for laser ablation and 8 (80%) for milligan morgan for operation techniques. Post-operative bleeding was zero for laser ablation and 4 (100%) were milligan morgan. The *P* value was 0.341 by chi-square test for laser ablation and 0.211 by chi-square test for milligan morgan, which was considered not statistically significant.

However, when evaluated in randomized trials, the postoperative course was not significantly different from that after the MM procedures.

Postoperative pain was evaluated using the VAS 0–10, where 0–1=no pain, 1.1–3=low pain intensity, 3.1–7=pain of medium intensity, 7.1–9=pain of high intensity, and 9.1–10=strong and unbearable pain. The VAS protocol was performed on day 1, day 8 and day 21 after surgery. For day 1, day 8 and day 21, the *P* value was less than 0.001 by ANOVA test among laser ablation and Milligan Morgan, which was considered statistically highly significant. The *P* value by post-hoc test was found to be less than 0.001 between each pair of laser ablation and milligan morgan operative techniques, which was considered statistically highly significant.

This was in agreement with similar results. In the LA, the procedure involves minimal wounds in relation to the base of the hemorrhoids, thus minimal pain is present. In the previous study, there was a reduction of pain by more than 50% in (M M) Moreover, there was a significant difference between (MM) and (LA) in the study conducted by in favor of the LA. In addition, another study compared MM and LA and found significant difference between them regarding pain VAS score on day 1 and weeks 1, 2, 3, 4, 8, and 12, with mush less pain and early relief of pain in the laser group. A study conducted showed no pain in 64%, mild to moderate pain in 28%, and severe pain in 8% of cases.

Operative and post-operative bleeding of which Zero were laser ablation and 3 (100%) were milligan morgan through operative bleeding. Post-operative bleeding was zero for laser ablation and 4 (100%) were milligan morgan. The *P* value was 0.0001 by chi-square test among the laser ablation and milligan morgan, which was considered statistically significant.

In a study involving LA, 4% of the patients had postoperative bleeding that persisted for 6 weeks. In the previous study, no significant difference was found in postoperative bleeding between MM and LA. In LA, only three (7.5%) patients had bleeding on week 1, with no bleeding starting week 2. In the previous study, there was a significant difference between MM and LA regarding postoperative bleeding in favor of the LA, with high rate and prolonged bleeding in the MM . The etiology of

posthemorrhoidectomy bleeding was attributed to the speed by which the surgical site healed, being slowest in MM and fastest in LA.

The recurrence after 6 month in laser ablation was 2 cases in 4th IV degree and Zero in the 3rd III degree while in Milligan Morgan was Zero in 3rd III and 4th IV degree of hemorrhoids. The *P* value was less than 0.001 by ANOVA test, which is considered highly significant. The *P* value of post hoc test regarding laser ablation and Milligan Morgan was less than 0.001, which was considered highly statistically significant.

In a study involving MM, 0% of patients had recurrence, but the follow-up was for a short period (2 weeks). The higher incidence of recurrence in LA was owing to recanalization of the respective veins, although the results were statistically non-significant.

This study included 30 patients, divided into two groups; Group I (LA): included 15 for laser ablation and Group II (MM): included 15 for Milligan Morgan operative techniques. Recovery and back to normal life in Laser ablation were after 1 week in the completely included participant group. These results represents statistically significant < 0.0001 P value. However, in Milligan Morgan operative technique, one case recover after 1 week, six cases recovered after 2 weeks, 6 cases recovered after six weeks and two cases recovered after 4 weeks. These results represents statistically non-significant < 0.0971 P value.

CONCLUSION

Finally, in conclusion the safety and efficacy of Laser ablation operative technique is more than Milligan Morgan operative technique open hemorrhoidectomy accompanied with a low incidence of post-operative complications and it is more effective in third-degree and fourth degree piles . laser ablattion is superior to Milligan Morgan conventional open surgical hemorrhoidectomy operative technique. With less Postoperative pain in comparison with (MM)($p<0.0001$). Operative time is significantly shorter in laser procedure ($p<0.001$). Postoperative pain is significantly low in laser procedures compared with the milligan morgan open hemorrhoidectomy operative procedure .

According to our findings observed that laser ablation operative technique in 3rd and 4th degree of hemorrhoids represent a good, safe and effective other than conventional Milligan Morgan Hemorrhoidectomy with shorter operative time , lower intraoperative bleeding and lesser postoperative symptoms .

The study parameters also showed a highly significant difference between the laser hemorrhoidoplasty and Milligan Morgan Haemorrhoidectomy in postoperative complications such as; bleeding, dose of analgesics, period of recovery and back to work VAS score for postoperative pain and discomfort, which proved that the laser ablation operative technique in hemorrhoids.

Laser ablation showed a significant high recurrence rate with 4th grade in comparison to 3rd degree hemorrhoids after 6 months follow up, regarding our study small-scale. However, a large-scale study should be carried out for clarification of the minor differences. Intraoperative and postoperative symptoms like blood loss, analgesic dose, duration of recovery, and duration of surgery showed a positive outcome in the study group. There were fewer postoperative complications and negligible need for analgesics and wound care after laser hemorrhoidoplasty.

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