Comparative Study Between Laser Hemorrhoidoplasty and Milligan-Morgan Hemorrhoidectomy in Baghdad and Babylon Cities

Karrar I. Mahmood[1], Salah H. Al-Janaby[2]*, Nawfal K. Khiro[3]

[1]Dept. of surgery, Babylon University, Hummurabi College of Medicine, Iraq. Email: Karar.Ibrahim@uobabylon.edu.iq
[2]Dept. of surgery, Babylon University, College of Medicine, Iraq. Email: Salahaljanaby@yahoo.com
[3]Dept. of surgery, Al-Nahrain University, College of Medicine, Iraq. Email: drnawfalsalih@gmail.com

Abstract

Introduction: Hemorrhoids are a prevalent anorectal disorder. Patients with hemorrhoids may have a number of symptoms, including bleeding, itching, prolapsing, mucus discharge, and discomfort (complex piles), but the main symptoms are bleeding and prolapse. The purpose of the study is to make a comparison regarding the safety, efficiency, and usefulness of laser hemorrhoidoplasty with the conventional surgical procedure used in the treatment of hemorrhoids. Method: Consent was obtained from all patients. Per rectal exam and proctoscopy have been done. Blood film, blood sugar, hepatic and renal figures, and coagulation profiles were performed. 80 patients were treated with laser hemorrhoidoplasty or open surgical hemorrhoidectomy. This research was conducted between May 2020 and November 2021 at various private hospitals and specialized centers in Baghdad and Babylon cities. Results: The LHP was conducted on 40 patients with third-degree hemorrhoids. 16 women and 24 men mean age of 47±12.6. (Table 1). 40 grade III hemorrhoids and/or prolapse patients underwent open surgery. 22 men and 18 women, mean age 49.13. Group I's average hospital stay was 2 to 4 hours, whereas Group II's was from 6 to 12 hours (mean 13.8). 2. Operative time in group I 15.90±3.5 min and 26.80±5.8 min in group II (p0.01) (Table 3). Group I reported less postoperative pain Tables 4,5. In Group II, excess mucosal resection caused two recurrences and strictures. Group I had 2 early discomfort patients and group II had 5. Group I bleeding occurs in two patients (one receiving 100 mg aspirin, the other 75 mg clopidogrel), and three patients in Group II patients. No transfusions were needed. 3 LHP and 5 open hemorrhoidectomy patients had post-operative oedema. Conclusion: LHP is more effective than open hemorrhoidectomy in treating third-degree piles and has lesser postoperative complications. LHP trumps open surgical hemorrhoidectomy. Less post-op pain. Laser surgery is quicker.

Keywords: LHP, hemorrhoidectomy, laser hemorrhoidoplasty

Introduction

Hemorrhoids are a prevalent anal condition. Patients may have a number of symptoms, including bleeding, itching, prolapsing, mucus discharge, and discomfort (complex piles), although there were only two primary symptoms which are bleeding and prolapsing. The therapy of hemorrhoids is centered on symptom relief, not the form of the anal verge. The incidence of hemorrhoidal disease was 11% in the overall population. People with hemorrhoidal illness were often middle-aged and had a history of this problem in their family. Women somewhat outnumbered males in the hemorrhoid population, and the majority of women with hemorrhoidal illness had a history of pregnancy.[1,2] Almost a third (33.3%) of patients seek medical care. In middle age Caucasians it is common, After the age of 65, the proportion of Caucasians decreases.[3,4] The anal cushions, in combination with the internal sphincter (IS), play a significant role in maintaining anal continence and ensuring the anal verge is continent for air and fluids. The displacement of the Treitz muscle may cause hemorrhoids.[5] There are four distinct degrees of hemorrhoids: Grade I bleeding only, Grade II bleeding and prolapse, but spontaneous rebound,

Access this article online

Quick Response Code:

Website: www.jnsbm.org

DOI: https://doi.org/10.4103/jnsbm.JNSBM_14_2_1

Address for Correspondence: Escuela Superior Politècnica de Chimborazo, (ESPOCH) Sede Orellana, El Coca 220150, Ecuador
Email: santiagoa.guaman@espoch.edu.ec

Submitted: 23rd April, 2023 **Received:** 29th April, 2023
Accepted: 27th July, 2023 **Published:** 12th August, 2023

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How to cite this article: Fuentes-Quisaguano O G, Guamán-Rivera S A, Erazo-Rodriguez F P, Guacapiña-Viteri A P, Aragón-Vásquez E F. Erythrina Edulis as A Potential Fodder Alternative For Improving Livestock Nutrition by Small Livestock Farmers. J Nat Sc Biol Med 2023;14:68-72

bleeding and prolapse of Grade III, but return manually (by the patient), and bleeding of Grade VI and persistent prolapse. Asymptomatic individuals with hemorrhoids need no treatment. The treatment ranges from modest measures, such as normalizing bowel habits, through clinical procedures and surgical hemorrhoidectomy. The optimal therapy for symptomatic individualswith third- and fourth-degree hemorrhoids is hemorrhoidectomy. Although hemorrhoidectomy is considered a simple operation, it is associated with significant postoperative consequences, such as discomfort, bleeding, and an infected incision, which extends the recovery period. [6] Recent improvements in technologies, such as laser hemorrhoidoplasty, are considered successful operations, due to their ability to minimize discomfort, decrease blood loss, and expedite wound healing, and a faster return to normal life. Over time, the treatment options for symptomatic individuals with hemorrhoids have evolved encompassing cautious medical therapy, non-surgical management, and several surgical techniques. Rubber band ligation (RBL), injectable sclerotherapy, cryotherapy, and infrared coagulation are the non-surgical methods. All of these may be performed as outpatient procedures without the need for an anesthetic. For hemorrhoids of grades I to III, these non-surgical methods are regarded as the most effective treatment option. Sometimes the conservative treatment may fail to alleviate symptoms, so shifting to surgery isnecessary . Indications for surgery include grades III and VI, the presence of substantial external piles, thrombosis, and the failure of non-surgical treatments. The surgical operation commonly performed is an open hemorrhoidectomy, which is named Milligan–Morgan technique, which is widely regarded as the gold standard and most commonly used method in the UK.[7] Pain after hemorrhoidectomy is the most common consequence experienced after surgical operations. Other early problems that may arise include urinary retention (20.1%), secondary or reactionary hemorrhage (2.4–6%), and abscess (0.5%). Anal fissures with bleeding and pain (1% - 2.6%), incontinence for air (0.4%), fistula of low type (0.5%), anal stenosis (1%), and recurrent hemorrhoids are delayed complications.[8,9] The objective of the study is to make a comparison regarding the safety, efficiency, and usefulness of laser Hemorrhoidoplasty with the conventional surgical procedure used in the treatment of hemorrhoids.

Method

Preoperative assessment: History, examination, investigation, and informed consent have been done on all individuals submitted to laser hemorrhoidoplasty. A total of 80 patients complaining of hemorrhoids were included in the study, they were divided into two groups, Group I: 40 patients were submitted for LHP, and Group II: 40 patients were submitted for open (Milligan–Morgan technique) hemorrhoidectomy. This study was performed at various private hospitals and specialized centers in Baghdad and Babylon cities between May 2020 and November 2021. The LHP was performed with (Q BIT 15 AG, GERMANY assembled in CHINA laser tell company https://www.lasertell.com/qbit-15-product/) the supplier was ALMANARA ALZARQAA scientific bureau Iraq\ Baghdad www.almanara-iq.com, as shown in Fig. 1.

Figure 1: Q BIT 15.

Operative technique

Group I: in the lithotomy position, a lubricated proctoscope was introduced into the anus, the laser fiber was inserted in a parallel direction to the anal mucosa into the hemorrhoidal plexus using a diode laser (980 nm), the laser power was adjusted to deliver in a pulsed fashion. The hemorrhoidal shrinkage was controlled by changing the duration and power (joules) of the delivered laser. The peak power was started from 8 Watt and was increased based on the local effect, this procedure was done in

repeated mode duration of 3 seconds, interval 1 second (3 seconds on, 1 second off), and treatment time was adjusted to 120 seconds causing shrinkage of hemorrhoidal tissues to approximately 5 mm. Ice was applied to each hemorrhoid for 2 minutes to minimize heat damage to healthy tissues. This procedure was repeated for each hemorrhoid. The patients were discharged after 2 to 4 hours, on oral antibiotics and analgesics and they kept on follow-up for 1 to 3 months, with no requirement for bowel preparation.

Group II: in the lithotomy position a V-shaped incision was done with ligation of the hemorrhoid pedicle, hemostasis was achieved with cauterization and a small wick lubricated with xylocaine gel 2% was inserted anally. About 1 to 2 hemorrhoids can be treated in one session. Patients were discharged after 6 - 12 hours on injection antibiotics and analgesics for three days then continued on oral antibiotics and analgesics and were followed up for 2 to 4 months, bowel preparation was needed in this group (24 hours soft diet with a preoperative enema). A 10-point numeric rating scale (NRS) is used to record pain in both groups, in which 0 refers to an absence of pain and 10 refers to the worst pain. NRS was recorded after 1 week, 2 weeks, 3 weeks, 1 month, 2 months. All data were analyzed statistically and represented in tables.

Results

The LHP have been done for 40 patients with third- and fourth-degree piles, their mean age was 47±12.6 (range, 24–70) years. There were 24 males and 16 females, Milligan–Morgan technique was performed on 40 patients with third- and fourth-degree piles, with the mean age of 49±12.3 (range 28-72) years. They are 22 males and 18 females, as shown in Table 1.

Table 1: distribution of patients according to age groups and gender.

		Group 1	Group 2
		No. (%) or Mean±SD	No. (%) or Mean±SD
		47±12.6 (24–70)	49±12.3 (28-72)
Age (years)	20–29	2 (10.0%)	3 (15.0%)
	30–39	7 (35.0%)	5 (25.0%)
	40–49	5 (25.0%)	6 (30.0%)
	50–59	4 (20.0%)	4 (20.0%)
	60–70	2 (10.0%)	2 (10.0%)
Gender	Male	24 (60.0%)	22 (55.0%)
	Female	16 (40.0%)	18 (45.0%)

In Group I, hospital stay ranged from 2 - 4 hours, while in Group II it extended from 6 - 12 hours, (Table 2). The mean duration of the LHP procedure was 15.90±3.5 min in Group I, while in Group II, it was 26.80±5.8 min($p<0.01$). Table 3 demonstrate early and late complications in both groups. Early pain was low in group I, this was also seen after one month as demonstrated in Table 4.

No chronic complications were reported, except for 2 cases, one with recurrence and the other with stenosis, and this resulted from abundant resection of mucosa in Group II. Pain (early) has been noticed in 2 cases with group I and five cases in group II.

Bleeding (mild) has been noticed in 2 cases (one of them taking aspirin 100 mg/day, the other taking clopidogrel tab 75 mg/day that was discontinued before intervention) in Group I, and three cases in Group II and managed by suture ligature. Post-operative edema was observed in 3 cases in Group I and five cases in Group II.

Table 2: Time and in-hospital stay.

	Group 1	Group 2
time (minutes)	15.90±3.5 min	26.80±5.8 min
Hospital stays (hours)	2–4	6–12

Table 3: Early and late complications in each group.

		Group 1	Group 2
Early postoperative Complications	Pain	2 (5%)	5 (12.5%)
	Bleeding	2 (5%)	3 (7.5%)
	Edema	3 (7.5%)	6 (15%)
Late postoperative Complications	Fistula	0	0
	Recurrence	0	1
	Stricture	0	1

Table 4: Pain according to NRS score with LHP group

NRS score	Day 1	Day 7	Day 14	Day 21	Month 1	Month 2
0-1	10/40	30/40	38/40	40/40	40/40	40/40
2-5	25/40	8/40	1/40	0/40	0/40	0/40

Table 5: Pain according to NRS score with the surgical group

NRS score	Day 1	Day 7	Day 14	Day 21	Month 1	Month2
0-1	5/40	0/40	10/40	15/40	18/40	40/40
2-5	28/40	30/40	22/40	5/40	2/40	0/40

Discussion

Laser Hemorhoidoplasty is a novel and less invasive alternative therapy for severe hemorrhoid complications.[10] This method is –relatively new in the towns of Iraq's Middle Euphrates, and only few studies[11] have addressed this field. The need for hemorrhoidal treatment is mostly

defined by the judgment of the severity, and the difficulty of treatment is generally linked with a hemorrhoidal degree,[12] which in turn is unrelated to symptom intensity. Diversity in management strategies has led to uncertainty over the most successful management techniques. Consequently, the optimal treatment modalities remain unresolved despite the fact that the majority of current therapies have been submitted to randomized evaluation. In general, a simple hemorrhoidectomy was suitable over non-surgical or surgical procedures for patients and surgeons.[13] Salfi[14] and Chia *et al.*[15] reported that laser hemorrhoidoplasty has a bactericidal effect, providing superior hemostasis, allowing for a speedy recovery, causing no injury to adjacent tissues, fewer postoperative problems, causing less bleeding and stenosis.[14,15] The most commonly established method for treating symptomatic individuals with hemorrhoids is open hemorrhoidectomy. However, open hemorrhoidectomy is associated with significant consequences, including postoperative discomfort, blood loss, and wound infection, which may result in an extension of recovery time.[16] In the early postoperative period and according to the NRS score, the pain scores were 10 against 5 for scores between 0-1, 30 versus 38 for scores between 2-5, and 2 versus 4 for scores more than 5 in the corresponding groups for LHP and open hemorrhoidectomy patients, respectively.[17] Pain is a significant adverse consequence that bothers patients and discourages them from undergoing surgical treatments. In the present research, Laser hemorrhoidoplasty resulted in considerably reduced postoperative discomfort than traditional open surgical hemorrhoidectomy during the first month after both operations.[18] This report revealed that LHP is a safe technique with much reduced postoperative discomfort. Also, Laser hemorrhoidoplasty is followed by much reduced operating time than open surgical hemorrhoidectomy (15.90 vs. 26.80min; p0.01).[19] LHP was a less-painful, minimally invasive procedure for the day-case management of hemorrhoids in which the hemorrhoid shrunk using a diode laser.[20,21] Considering the postoperative problems found in this research, in Group I, two patients had pain (5%), two patients experienced bleeding (5%), and three patients experienced edema (7.5%). In Group II, five patients experienced pain (12.5%), three patients experienced bleeding (7.5%), and six patients experienced post-operative edema (15%). Group I had no incidences of late complications such as fistula, stricture, incontinence, or recurrence. However, there were two cases reported in Group II. The first patient complained of stricture, whereas the second patient had recurrence after 6 months. The results of study conducted by Jahanshahi *et al.*[22] suggested that LHP is a safe method for the treatment of hemorrhoids due to less postoperative consequences, including as bleeding, discomfort, stenosis, and recurrence. Various studies concluded that postoperative discomfort with LHP was much lower than open hemorrhoidectomy, in addition to decreased surgical time, bleeding, and return to normal activities. Other researchs have shown that LHP is better than open hemorrhoidectomy in people with symptomatic hemorrhoids that do not respond to medical treatment. This potential effectiveness manifested itself in the decreased pain, bleeding, in hospital stay, and post-operative analgesic use.[23] The same results have been found In research conducted on twenty patients treated by LHP.[18]

Take into consideration the following precautions during LHP, keep the laser fiber parallel to the mucosa to prevent harm or burns to the anal mucosa or internal sphincter, and ensure that the laser power is supplied in pulses to reduce periarterial normal tissue degeneration. The absence of long-term follow-up and evaluation was a significant limitation of our research since all patients were not accessible for two-year follow-up. However, all individuals who were engaged in this research are still being evaluated for future assessments. Another problem of this study is the small number of patients included in this research.[24,25]

Conclusion

LHP is more successful in treating third- and fourth-degree piles and has a lower risk of postoperative consequences than open hemorrhoidectomy. When compared to the more traditional open surgical hemorrhoidectomy, the LHP approach emerges as the clear victor.

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