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Research Article

**COMPARISON OF EFFECTIVENESS OF  
HEMORRHOIDECTOMY WITH USE OF LIGASURE WITH  
TRADITIONAL MILLIGAN MORGAN  
HEMORRHOIDECTOMY****Dr Sidra Abbas, Dr Muhammad Abid Owais**  
Baqai Medical University, Karachi**Article Received:** December 2019    **Accepted:** January 2020    **Published:** February 2020**Abstract:**

**Objective:** The aim of this study is to compare the effectiveness of hemorrhoidectomy carried out with the utilization of LigaSure with the tradition procedure of Milligan Morgan Hemorrhoidectomy.

**Methodology:** This research work carried out in the Surgery Department of Baqai University Hospital from March 2017 to November 2019. A sum of total 55 patients were the part of this research work. We randomly selected the patients in Group-A (Hemorrhoidectomy by using LigaSure) and Group-B (Milligan Morgan Hemorrhoidectomy). We compared the effectiveness of both of the methods by duration of surgery, loss of blood, healing of wound and scores of immediate, 1<sup>st</sup> and 7<sup>th</sup> day after the surgical intervention.

**Results:** Out of 55 patients, 23 patients were male and 32 patients were females. The most common involved age group was present with having age 40 to 60 years. 3<sup>rd</sup> degree hemorrhoids were available in 67.3% (n: 37) patients whereas remaining 32.7% (n: 18) patients had the 4<sup>th</sup> degree hemorrhoids. Group-A contained 29 patients whereas there were 26 patients in Group-B. The average duration of surgery of Group-A was 52.5 ± 11.9 whereas it was 36.6 ± 9.8 in Group-B. Average loss of blood in the patients of Group-A was 51.92 ± 15.68 whereas it was 70.34 ± 25.59 in Group-B. There were low scores of pains in the patients of Group-A.

**Conclusion:** Hemorrhoidectomy by using LigaSure is much better procedure as compared to conventional Milligan Morgan Hemorrhoidectomy but we need further research works with large samples size and for longer duration to consolidate the findings of this research work.

**KEY WORDS:** Hemorrhoidectomy, Intervention, Effectiveness, LigaSure.

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**INTRODUCTION:**

Hemorrhoids is very common complication which leads to bleeding [1]. Hemorrhoidectomy is the best treatment option for the mitigation of hemorrhoids [2]. There are a large number of procedures are in practice like sharp excision, laser treatment, and stapled hemorrhoidectomy [3-6]. Though the procedure of hemorrhoidectomy is very small but the complication during recovery after surgical intervention are very painful, therefore, it is the last option of treatment considered by most of the patients. This procedure is also disliked by surgeons because it is much painful for patients. The conventional Milligan Morgan Hemorrhoidectomy leads to various complications as severe pain, infection of wound and bleeding which also increases the stay in the hospital. According to many professionals, they are not able to transfix the vascular pedicles of the hemorrhoids, but they can seal them with the utilization of LigaSure [7].

LigaSure sealing system of vessel is bipolar electro-thermal mean which has the ability to seal the vessels of blood by measured pressure arrangement and radio frequency [8]. One other current and advanced method known as stapled hemorrhoidectomy is also in practice by many professionals but the findings are not conclusive [9]. There are very less research works on the ligaSure outcomes but still it is proven as the most secure and simple surgical therapy of the hemorrhoids in terms of duration of surgery, pain after surgical intervention and infection of wounds in comparison with the traditional hemorrhoidectomy according to some research works [10, 11]. One research work conducted in India confirmed that this very effectual and secure method with less loss of blood, pain after surgery and related complications as compared to traditional process of hemorrhoidectomy [12], but no research of this nature is present in our country Pakistan.

**MATERIAL AND METHODS:**

This research work was carried out in the Surgical Department of Baqai University Hospital from March 2017 to November 2019. The ethical committee of the institute gave the permission to conduct this research work. Total 55 patients were the part of this research work. All the patients present in range of age from 18 to 70 years with 3<sup>rd</sup> or 4<sup>th</sup> degree of hemorrhoids were the participants of this research work after giving written consent. Patients suffering from other serious complications or undergoing combine procedure were not the part of this research. We also excluded the patients who underwent surgical intervention due to hemorrhoids. We divided the patients randomly in Group-A (hemorrhoidectomy by using LigaSure) and Group-B (Milligan Morgan Hemorrhoidectomy) with the

utilization of software v.1.0.0. We did not describe the surgery type to the patients. We used the spinal or general anesthesia. We carried out the procedure in lithotomy position of patients. We followed the same primary steps in both surgical interventions. We used the standard procedures for both procedures.

Nurse of the operation theatre recorded the duration of surgery. The record of the loss of blood maintained with the amount of the soaked gauzes. The soakage of one 4×4 piece of gauze considered as thirty millimeters loss of blood. We gave the standard package of medication to all the patients after surgical intervention. We advised the injectable antibiotics of ciproxin 400.0 mg two time daily and Metronidazole 500.0 mg three times daily with injectable ketocrolac 30.0 mg three times daily during first 24 hours after the duration of surgery. We advised all the patients to take the isphaghoul husk 2 full table spoon two times in a day for complete 2 weeks after the surgery. We prescribed metronidazole 400.0 mg 3 times daily & ciproxin 500.0 mg 2 times daily. We also advised paracetamol tablets thrice daily and diclofenac 50.0 mg according to the situation. We discharged the patients after one day of surgery. We told patients to clean their wounds twice daily. We followed the patients in 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> week after their discharge from hospital. We used the VAS (Visual Analogue Score) for the measurement of pain. We inspected the wound by parting the buttock on 14<sup>th</sup> day after surgery. SPSS V.22 was in use for the statistical analysis of collected information. We used the T test for the comparison of the duration of surgery, loss of blood and pain after surgical intervention in the patients of both groups. P value of  $\leq 0.050$  was the significant one.

**RESULTS:**

Out of 55 patients, 23 patients were male and 32 patients were females. The most common age group was present with the age of 40 to 60 years. There was presence of 3<sup>rd</sup> degree hemorrhoids in 67.3% (n: 37) patients whereas remaining 32.7% (n: 18) patients were present with 4<sup>th</sup> degree of hemorrhoids. There were 29 patients in Group-A in which twenty patients were present with 3<sup>rd</sup> degree hemorrhoids whereas there were 26 patients in Group-B in which seventeen patients were present with 3<sup>rd</sup> degree hemorrhoids. The average duration of surgery of Group-A was  $52.5 \pm 11.9$  whereas it was  $36.6 \pm 9.8$  in Group-B. The average loss of blood in the patients of Group-A was  $51.92 \pm 15.68$ ml whereas it was  $70.34 \pm 25.59$ ml in patients of Group-B. There were less scores of pain in patients of Group-A as compared to other group as presented in Table-1.

**Table-I: Comparison of Operative Outcomes in Patients Undergoing LigaSure and Milligan Morgan's Hemorrhoidectomy**

Outcomes	Ligasure Group A (n=29)	Milligan Morgan Group B (n=26)	P value
Males	9	14	-
3RD Degree	20	17	-
4th Degree	9	9	-
Mean Operative time (minutes)	36.6	52.5	0.0010
Blood loss (in ml)	51.92	70.34	0.0030
Pain score at immediate POD	4.61	6.65	0.0010
Pain score at 1st POD	3.65	5.41	0.0010
Pain score at 7TH POD	1.34	2.44	0.0010
Wound Healing (Appearance of granulation tissue on 14th POD)	24	16	-

We evaluated the wound healing with the presentation of the granulation tissue on 14<sup>th</sup> day after surgery which were present in 24 (n: 29) patients of Group-A, but granulation tissues were present in sixteen (n: 26) of Group-B.

### DISCUSSION:

Hemorrhoidectomy with the use of LigaSure is current organized method which supports in the reduction of complications and there are many comparisons of this procedure with the conventional surgical methods [13, 14]. The main reduction is in the pain after surgery in the patients undergoing LigaSure method i.e. from 4.6 to 1.33 in comparison with the 6.65 to 2.44 in other observed group. The findings of this research work are comparable with one other research work carried out in India which stated the post-surgical pain on immediate day after surgical intervention as  $4.1 \pm 0.8$  which reduced to  $1.2 \pm 0.2$  on 7<sup>th</sup> day after surgery [15]. In the same manner, the duration of surgery in this research work was 36.6 in group of LigaSure which was much less in comparison with other group having 52.5 minutes, this finding is also comparable with other research works which also stated the less consumption of time in LigaSure method [15].

One important reason to use the LigaSure technique for the hemorrhoidectomy is that the sealing system of vessel considerably reduces thermal spread as compared to the diathermy instruments. LigaSure device precisely restricts the thermal spread to adjacent two millimeters tissue. Normally, low amount of the thermal injury at site of surgery leads to reduction of pain after surgical intervention [16, 17]. There is very low expense of this surgical procedure [18,19]. There is very low complication rate with this technique but still there is need to consolidate the findings of this research work. Very low sample size is one of the most important limitation of this research work [20]. There is need of further comparison with other trials to authenticate the findings of this case study.

### CONCLUSION:

The effectiveness of hemorrhoidectomy by using LigaSure is much better as compared to the conventional method of Milligan Morgan Hemorrhoidectomy but there is requirement of further research works on large sample size and for long durations to consolidate the findings on general population.

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