CODEN [USA]: IAJPBB **ISSN: 2349-7750**

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
http://doi.org/10.5281/zenodo.3251961

Available online at: http://www.iajps.com ***Research Article***

COMPARE THE OUTCOME OF HEMORRHOIDECTOMY BY LIGASURE WITH CONVENTIONAL MILLIGAN MORGAN'S HEMORRHOIDECTOMY

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Abstract:
Introduction: *Hemorrhoids, a varicose condition is one of the commonest illnesses which causes per rectal bleeding. The main effective and ultimate treatment for 3rd or 4th degree haemorrhoids is Haemorrhoidectomy.*
Aims and objectives: *The basic aim of the study is to compare the outcome of hemorrhoidectomy by LigaSure with conventional Milligan Morgan's hemorrhoidectomy.*
Material and methods: *This randomized control study was conducted in Allama Iqbal Memorial Teaching Hospital Sialkot during January 2018 to September 2018. This study was conducted with the permission of ethical committee of hospital. There were total 50 patients which were included in this study. The patients were divided into two groups. Group A includes Haemorrhoidectomy by Ligasure and group B includes Milligan Morgan Haemorrhoiectomy by using the random allocation. The procedure was carried out with the patient in lithotomy position and a minor reverse Trendelenberg angle.*
Results: *The data were collected from 50 patients which can be divided into two groups. The mean age of both groups were 40 to 60 years. Group A included 29 cases in which 20 were having 3rddegree heamorrhoids while Group B included 21 cases in which 17 were having 3rd degree heamorrhoids. The mean operating time of Group A was 52.5 minutes with standard deviation of 11.9 while it was 36.6± 9.8 in the other group. The mean blood loss in group A was 51.92ml with standard deviation of 15.68 while it was 70.34±25.59 in group B.* ***Conclusion:*** *It is concluded that Ligasure™ hemorrhoidectomy is a sutureless, closed hemorrhoidectomy technique dependent on a modified electro-surgical unit to achieve tissue and vessel sealing. It is safe and effective, has less blood loss, postoperative pain and complications compared to conventional hemorrhoidectomy.*

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Please cite this article in press Abdul Wahab et al., ***Compare The Outcome Of Hemorrhoidectomy By Ligasure With Conventional Milligan Morgan's Hemorrhoidectomy.,*** *Indo Am. J. P. Sci, 2019; 06[06].*

INTRODUCTION:

Hemorrhoids, a varicose condition is one of the commonest illnesses which causes per rectal bleeding. The main effective and ultimate treatment for 3rd or 4th degree haemorrhoids is Haemorrhoidectomy. Numerous other procedures have also been practiced, varying from open or closed sharp excision, laser therapy, ultrasonic scalpel dissection to stapled Hemorrhoidectomy. Even though Haemorrhoidectomy is thought to be a small procedure but the complications and the postoperative recovery are very painful to the patient and maybe that's the reason why patients consider haemorrhoidectomy as the last option of treatment[1]. Patients as well as surgeons do not like Haemorrhoidectomy because as it is painful for the patient in the same way it is considered to be a difficult procedure among many surgeons[2].

The main effective and ultimate treatment for 3rd or 4th degree haemorrhoids is Haemorrhoidectomy[3]. Numerous other procedures have also been practiced, varying from open or closed sharp excision, laser therapy, and ultrasonic scalpel dissection to stapled Hemorrhoidectomy[4]. Even though Haemorrhoidectomy is thought to be a small procedure but the complications and the postoperative recovery are very painful to the patient and maybe that's the reason why patients consider haemorrhoidectomy as the last option of treatment[5].

Traditional Milligan Morgan haemorrhoidectomy is the open surgical procedure in which the haemorrhoid pedicle is ligated by a transfixing suture which may lead to some postoperative complications mostly pain, bleeding and wound infection which ultimately cause prolonged stay in hospital[6]. A number of surgeons believe that by avoiding vascular pedicle ligation the chances of secondary bleeding can be decreased. The reason behind this is belief that it may lead to ischaemia and necrosis at the region where these sutures are applied it may also integrate the sphincter muscle and consequently causes acute postoperative pain, wound infection and bleeding[7]. Additionally, if the sutures are applied deeply they can also cause firm circular scarring at the anus later on. Therefore, many authors have said that we do not transfix vascular pedicles of haemorrhoids, but we seal them by LigaSure[8].

AIMS AND OBJECTIVES:

The basic aim of the study is to compare the outcome of hemorrhoidectomy by LigaSure with conventional Milligan Morgan's hemorrhoidectomy.

MATERIAL AND METHODS:

This randomized control study was conducted in Allama Iqbal Memorial Teaching Hospital Sialkot during January 2018 to September 2018. This study was conducted with the permission of ethical committee of hospital. There were total 50 patients which were included in this study.

INCLUSION CRITERIA:

All patients with ages between 18 to 70 years of both genders with third and fourth degree Haemorrhoids were included in this study. Haemorrhoidectomy was done by using LigaSure and conventional Milligan Morgan haemorrhoidectomy in this study.

EXCLUSION CRITERIA:

Patients who were undergoing a combined procedure for fissures or fistulae or those having other conditions like thrombosed haemorrhoids, inflammatory and bowel diseases not included in this study.

DATA COLLECTION:

The patients were divided into two groups. Group A includes Haemorrhoidectomy by Ligasure and group B includes Milligan Morgan Haemorrhoiectomy by using the random allocation. The procedure was carried out with the patient in lithotomy position and a minor reverse Trendelenberg angle. The primary steps in both surgeries were same and consisted of Examination under anesthesia, delivery of hemorrhoids by artery forceps, one applied at the muco cutaneous junction of hemorrhoid, the other at the apex and a skin incision at the base of hemorrhoids and separation of hemorrhoid tissue from the internal sphincter fibers by monopolar diathermy or scissors. After this in the Millagan Morgan's procedure the hemorrhoid pedicle was transfixed with 0 number Vicryl suture. In the Ligasure group the jaws of the handset were applied on the pedicle and the instrument activated by the foot paddle. A digitally managed feedback circuit automatically stopped the flow of energy when coagulation of the vessels and mucosa was achieved. No sutures were applied as the Ligasure device also achieved mucosal fusion. Anal canal packing was not usually done except when there was any doubt about securing heamostasis. The patients were discharged on the first postoperative day unless otherwise clinically indicated. All patients were asked to clean the wound doing sits bath twice daily. Patients were then followed up in the clinic 1st, 2nd, 3rd and 4th week after discharge. Patients were taught with an 11-point visual analogue pain score from zero to ten.

STATISTICAL ANALYSIS:

Statistical analysis was performed with SPSS software version 17. Independent sample T- test was applied to compare the operative time, blood loss and post-operative pain in both groups. Post stratification Independent Sample T- test was applied; value ≤ 0.05 will be taken as significant.

RESULTS:

The data were collected from 50 patients which can be divided into two groups. The mean age of both groups were 40 to 60 years. Group A included 29 cases in which 20 were having 3rddegree heamorrhoids while Group B included 21 cases in which 17 were having 3rd degree heamorrhoids. The mean operating time of Group A was 52.5 minutes with standard deviation of 11.9 while it was 36.6± 9.8 in the other group. The mean blood loss in group A was 51.92ml with standard deviation of 15.68 while it was 70.34±25.59 in group B.

Table 01: Comparison of operative outcomes in patients undergoing Ligasure and Milligan Morgan's hemorrhoidectomy

	Ligasure Group A	***Milligan Morgan Group B***	***P value***
Males	09	14	
3RD Degree	20	17	
4th Degree	09	09	
Mean Operative time(minutes)	36.6(9.8)	52.5(11.9)	0.001
Blood loss (in ml)	51.92(15.68)	70.34(25.59)	0.003
Pain score at immediate POD	4.61(0.80)	6.65(0.97)	0.001
Pain score at 1st POD	3.65(0.79)	5.41(0.68)	0.001
Pain score at 7TH POD	1.34(0.56)	2.44(0.68)	0.001
Wound Healing (Appearance of granulation tissue on 14th POD)	24	16	

DISCUSSION:

For symptomatic grade 3 and 4 hemorrhoids, some form of hemorrhoidectomy remains the accepted modality of treatment. The traditional methods like the Milligan Morgan method and the Ferguson's method have been in practice for more than half a century for want of a better alternative. Recent years have seen the introduction of newer techniques with relative merits and demerits[9]. The most significant recent introduction has been the circular stapling device for prolapsed hemorrhoids. This has been criticized for not treating the external component of hemorrhoids and the skin tags. Additionally the stapler cartridges are expensive and beyond the reach of most patients[10].

About 2 years ago we acquired the Ligasure™ device. It is an electro-surgical device, which is an improved version of bipolar diathermy. It is so effective in achieving hemostasis that it is described as a 'vessel sealing system'. The energy is delivered only to the tissue grasped within the jaws of the hand piece with minimal spread of electrical or thermal energy to adjacent tissues. Complete coagulation of vessels and also tissues is achieved with minimal charring in contrast to conventional diathermy[11]. A computer controlled feed back loop automatically stops the flow of energy when coagulation of the vessels and mucosa is achieved. The vascularized tissue caught between the jaws is reduced to a wafer thin seal, which can be cut across with scissors[12]. Similarly the mean operative time in this study was 36.6 in Ligasure group

which was less as compared to the other group having 52.5 minutes comparable to other studies which also showed less time consumption of Ligasure procedure[13].

CONCLUSION:

It is concluded that Ligasure™ hemorrhoidectomy is a sutureless, closed hemorrhoidectomy technique dependent on a modified electro-surgical unit to achieve tissue and vessel sealing. It is safe and effective, has less blood loss, postoperative pain and complications compared to conventional hemorrhoidectomy. Technically it is much simpler because suturing is not required and hemostasis is easy to achieve. It has the potential of making hemorrhoidectomy in to a day-care procedure.

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