

Haemorrhoidectomy: An Experience of 144 Cases

Tariq Rashid¹, Umar Farooq¹ and Mahwish Rabia²

ABSTRACT

Objective: The aim of this study is to determine various complications of ligaSure™ haemorrhoidectomy during the learning curve in a tertiary care hospital.

Study Design: Prospective descriptive study.

Place and Duration of Study: This study was conducted at the Department of General Surgery at Social Security Teaching Hospital Islamabad from March 2017 to September 2019.

Materials and Methods: The patients having age more than 12 years with grade III and IV haemorrhoids admitted through OPD were included in this study. The patients with recurrent disease, associated perianal pathology like anal stenosis, fistula in ano etc., deranged bleeding profile and patients with positive viral serology for hepatitis B or C were excluded. All the patients underwent ligaSure™ haemorrhoidectomy. All the complications associated with the LigaSure™ haemorrhoidectomy were noted on a specified proforma. The data was analyzed by using SPSS 15 software.

Results: A Total of 144 patients participated in this study, 68.83% were males and 31.17% were females. Their mean age was being 44±5 years. The mean pain score on visual analog scale was 4.1. The next most common complication was bleeding (6.25%) followed by anal spasm (4.86%), and urinary retention (4.17%). Only two patients had wound infection which was managed conservatively by antibiotics and sitz bath. There was no incontinence and recurrences observed in the subsequent follow up after six months.

Conclusion LigaSure™ hemorrhoidectomy is not only safe and effective but also has less pain and reduced blood loss, and fewer other complications. Technically it is much simpler because it is sutureless and hemostasis can be easily achieved.

Key Words; LigaSure™ haemorrhoidectomy, Complications, Haemorrhoidectomy

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INTRODUCTION

Haemorrhoids are one of the most common cause of bleeding per rectum. The word "Haemorrhoid" is derived from the Greek word "Haemorrhoides" meaning flow of blood (haem=blood, rhoos=flowing)¹. Haemorrhoids are classified into four grades according to the degree of their prolapse. Clinically, 3rd degree hemorrhoids are anal cushions which come through the anus on straining and require manual reduction back into the anal canal, while 4th degree internal hemorrhoids are permanent prolapses that are irreducible².

There is increase in the incidence of haemorrhoids with increase in age and it has been observed that at least 50% of population over the age of 50 years do face some degree of hemorrhoid formation. Men are seen affected roughly twice as compared to women³. Haemorrhoidectomy is considered superior to all other conservative procedure, including injection sclerotherapy, rubber band ligation, cryotherapy or photocoagulation for treating symptomatic grades III and IV hemorrhoids⁴. Even with the availability of new techniques, haemorrhoidectomy and haemorrhoidopexy are the treatment of choice for both third and fourth degrees of haemorrhoids^{4,5}. However postoperative complications are still a headache for the surgeons. At present, there are two traditional surgical approaches include the closed haemorrhoidectomy i.e. (Ferguson and Parks) and the open haemorrhoidectomy i.e. (Milligan–Morgan) but complications are almost similar in both types particularly in sever pain, blood loss, urinary retention and secondary bleeding that results in longer hospital stays⁶. Other complications include anal stenosis, incontinence, loss of sensation around perianal region and delayed recovery e.t.c. The postoperative pain is associated with the trauma to the sensitive skin and tissue around the anus⁷. Much of this postoperative pain may be because the thermal injury

¹. Department of Surgery, Islamabad Medical and Dental College, Islamabad.

². Department of Paediatrics, H.B.S. Medical College, Islamabad.

Correspondence: Dr. Tariq Rasheed, Associate Professor of Surgery, Islamabad Medical and Dental College, Islamabad.

Contact No: 0300-5558897

Email: drtariqr@gmail.com

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due to the use of cautery and the knots applied to ligate the haemorrhoids. The search of the most effective and painless approach for the management of hemorrhoids is still a real big concern for general surgeons⁸. Different approaches and instruments has been tried by the surgeons to deal with these complications. Excisional haemorrhoidectomy can be completed with the use of scissors, diathermy, stapler device or a vessel sealing device like LigaSureTM. LigaSure, a vessel sealing device has been in practice for more than a decade for haemorrhoidectomy⁹.

This is an improved version of bipolar diathermy with further advantage of achieving haemostasis by its vessels sealing system which acts by a combination of pressure and heat produced by radiofrequency, . It can seal blood vessels up to 7 mm in diameter. The delivered energy is confined to tissue clinched between the jaws of the forceps with very limited lateral thermal spread to the surrounding tissues which is not more than 2mm. It is a multifunctional device with the ability of grasping, sealing, blunt dissection, and ultimately dividing tissues^{1,10}. Further LigaSureTM electro-surgical unit stops energy delivery as soon as the tissue sealing is complete. The confined thermal dispersion allows the surgeon to perform a relatively bloodless surgery and reduce the anal spasm which is responsible for most of the postoperative pain after haemorrhoidectomy. LigaSureTM haemorrhoidectomy is considered now superior to conventional diathermy haemorrhoidectomy as it is designed specifically to be used in a more confined surgical field due to relatively bloodless surgery, the precise visibility and dissection has become more easier. Further there is no need of suture to tie the haemorrhoids which otherwise produces a wound that needs a significant time to heal in addition to a threat of slipping of ligature¹¹. Various studies have shown it an effective and safe tool for haemorrhoidectomy because it offers bloodless haemorrhoidal excision and reduced tissue trauma, postoperative pain, infection rate, time for wound healing and time to return to normal activities^{9,10,11}. We also have conducted this study to see the complications of LigaSureTM haemorrhoidectomy in our setup.

MATERIALS AND METHODS

This prospective study was conducted in General Surgery department at Punjab Employees Social Security Teaching Hospital Islamabad from March 2017 to September 2019. The study was approved by the ethical committee of the hospital. The patients with the age more than 12 years with grade III and IV haemorrhoids admitted through OPD were included in this study. Patients having recurrent disease, associated perianal pathology like anal stenosis, fistula in ano e.t.c, deranged bleeding profile and patients having positive viral serology for hepatitis B or C were excluded. All

the patients had preoperative workup in surgical OPD. All the patients had been tested for CBC, LFTs, Bleeding Profile, RFTs, Hepatitis B, C and HIV. The procedure was explained to all the patients in order to get the informed consent. All the patients received either general anaesthesia or spinal anaesthesia and operated in lithotomy position. After manual dilatation of the anal sphincter, the external and internal parts of the haemorrhoids were dissected and lifted from the sphincter up to the base of the haemorrhoids. The pedicle then sealed with the LigaSureTM and the excess tissue removed. The haemostasis achieved either with ligasure or monopolar diathermy if required. Mucosal fusion was also achieved with the use of ligasure therefore no stitch was applied. achieved mucosal fusion. Where required a stitch with vicryl was only applied for achieving haemostasis. All the patients were given antibiotics, analgesics, laxatives, local anaesthetic gel and encouraged to have sitz bath postoperatively. All the complications associated with the LigaSureTM haemorrhoidectomy were noted on a specified proforma. The severity of the pain postoperatively was recorded on visual analog scale from 0 – 10 cm from immediately postoperative period to one week on daily basis and mean score was calculated for every patients. Zero was labelled as No pain, 1 to 3 mild pain, 4 to 6 moderate pain and 7 to 10 as severe pain. Mostly patients were discharged within three days after surgery except those developed any complication. For further follow up, the patients were called in surgical OPD at the end of first week, 3rd week, 6th weeks and six months intervals to see any complication related to ligasure haemorrhoidectomy. The data was analyzed by using SPSS 15 software.

RESULTS

A total of one hundred and forty four patients were studied. The mean age the patients was 44±5 years. The majority (35.41%) was lying in the fifth decade of life. The male patients (68.83%) were more as compared to female patients (31.17%). The mean operative time for LigaSureTM haemorrhoidectomy was 20.3 minutes. Mean postoperative hospital stay was 3.1 days. All the patients have pain with varying degree managed with analgesics. The assessment of pain during postoperative hospital stay was done on mean visual analogue scale ranging from 0 – 10cm which was 4.1. The next most common complication was peroperative bleeding which was 6.25% and required haemostatic ligature. Seven patients (4.86%) had anal spasm postoperatively and all were managed conservatively with sitz bath, analgesics and 2% glyceryl trinitrate ointment. Six (4.17%) patients had urinary retention on the first postoperative day which was managed by temporary foley's catheterization. Only two patients had wound infection which was managed conservatively by antibiotics and sitz bath. There was no incontinence and recurrences

observed in the subsequent follow up after six months.

Table No.1: Sex distribution, N= 144

S.No	Sex	No. of patients	% age
1	Male	106	68.83
2	Female	48	31.17
	Total	144	100

Table No.2: Age Distribution n=144

Age Distribution In years	No. of Patients	% age
< 30	6	3.9
31 – 40	42	27.28
41 – 50	51	35.41
51 - 60	39	27.08
>60	16	10.39
Total	144	100

Table No.3: Complications

S. No.	Complication	No. of patients	% age
1	Bleeding	9	6.25%
2	Anal spasm/stenosis	7	4.86%
3	Urinary retention	6	4.17%
4	Infection	2	1.39%
5	Incontinence	0	0%
6	Recurrence	0	0%

DISCUSSION

Haemorrhoids are one of the most common cause of bleeding per rectum in our patients presented in the out patients department. Most of the patients with complaint of bleeding per rectum presents very late in surgical department in our society and diagnosed as having grade III or IV haemorrhoids because they remain reluctant to present themselves to the doctor in the initial stage due to social hesitation or getting treatment from "hakims". Many treatment options are in practice like conservative medical treatment, injection sclerotherapy, band ligation, cryotherapy and surgical haemorrhoidectomy¹². Surgical haemorrhoidectomy is still the gold standard treatment for symptomatic haemorrhoids. But the complications especially bleeding and postoperative pain associated with Milligan and Morgan (open haemorrhoidectomy) and Ferguson (closed haemorrhoidectomy) are still a headache for the colorectal surgeon and they always search newer techniques which are safe and better for the patients¹³. In this context, different techniques of surgery has been refined and equipment have been developed to deal with the bleeding and postoperative pain which includes the use of cautery for dissection, the use of lactulose and metronidazole during perioperative phase, lateral internal sphincterotomy or even some surgeons also use intraoperative injection of botulinum neurotoxin¹⁴. Stapled haemorrhoidectomy was introduced in the recent past but has not secure its popularity because of the high cost of the stapler and the demand of the expertise in the use of the device.

Now a days vessel sealing equipment, a type of bipolar diathermy, known as LigaSureTM is available in most of hospitals for General Surgery. It allows complete sealing of the blood vessel up to 7mm safely therefore bleeding has significantly reduced. There is also minimal lateral thermal spread not more than 2mm. Its use in the haemorrhoidectomy is becoming popular now a days as it is easy to use and its application gives a distinct line of coagulation due to which bloodless haemorrhoidal excision is possible, making it an excellent instrument for haemorrhoidectomy^{15,16}. Several clinical trials have been conducted to reveal its true usefulness, in regard to establish the complications and recurrence rate. However, with the information till to date we have, this procedure is considered safe with less bleeding and postoperative pain^{6,7,17}.

One hundred and forty four patients were studied. Mean age of patients was 44±5 years. Majority was males as compared to females. Mean hospital stay was 3.1 days. These findings were similar with most of the studies^{17,18}. The mean operative time was 20.3 min which was little higher as compared to most national and international studies. The most likely cause for higher operative time might be the learning curve of the surgeons to use the ligaSureTM device.

The most common complication was postoperative pain. In one of the recent studies, Khadem TJ, found postoperative pain in 26.4% patients although he did not describe the severity of the pain. However in other studies, researchers have described the severity of postoperative pain on visual analog scale. Bahena JA showed mean VAS 4.8 in his study.⁵ In our study, mean VAS was 4.1 which is similar with most of the studies^{18,19}.

Haemorrhoidectomy is also associated with bleeding which bothers the surgeons. Traditional scissor dissection is associated with significant peroperative bleeding. The use of diathermy dissection has reduced the bleeding significantly but there is still a need of ligature which sometimes slips causing postoperative bleeding. However stapled haemorrhoidectomy has overcome these problems but its high cost has reduced its advantage⁶. On the other hand the ligaSureTM not only sealed the vessel but also restore mucosa²⁰. Therefore it results not only reduced bleeding but also there is no need of suture. We require suturing in 6.25% patients to secure the bleeding even after the use of ligaSureTM. In these cases either vessel size was more than 7mm or they were having cluster of vessels.

Anal spasm was found in 4.86% patients in early postoperative period which was managed conservatively with sitz bath lignocaine gel, stool softner and analgesics. Urinary retention was found 4.17% patients which was managed with temporary foley's catheterization. Only 1.39% patients had wound infection which was managed conservatively. However incontinence and recurrence were not found in any

patient followed up to six months after surgery. These findings are similar with most national and international studies^{17,20}

CONCLUSION

LigaSure™ hemorrhoidectomy is safe and easy to use and it is a closed hemorrhoidectomy technique which does not require suture but it depends on a modified bipolar diathermy unit to achieve the sealing of tissue and vessels. It is not only safe and effective but also has reduced blood loss, less postoperative pain and minimum complications. Technically it is simple and easy as there is no need of stitch to control bleeding.

Author's Contribution:

Concept & Design of Study: Tariq Rashid
 Drafting: Umar Farooq
 Data Analysis: Mahwish Rabia
 Revisiting Critically: Tariq Rashid, Umar Farooq
 Final Approval of version: Tariq Rashid

Conflict of Interest: The study has no conflict of interest to declare by any author.

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