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Postoperative complication of haemorrhoidectomy done by ligasure

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Abstract

Background: Postoperative complication of the haemorrhoidectomy is a serious problem and need urgent intervention to save the patient.

Objectives: To evaluate the postoperative complication and managing there in a perfect way to decrease the morbidity and mortality of the patients.

Patients and Method: This prospective randomized study was carried out in the Department of Surgery, Jenen private hospital. Included in the study were 500 consecutive patients of symptomatic grade III and IV hemorrhoids who were receiving Ligasure hemorrhoidectomy. The patients were admitted in the Surgery Ward on the morning of the procedure and discharged the next day except when they had to stay longer for a post-operative complication. All procedures were carried out under local anaesthesia administered by the surgical team. The procedure was carried out with the patient in lithotomy position and a slight reverse Trendelenberg tilt.

Results: Five hundred patients were studied, the age ranged from 20 to 60 years, with a mean age of 30 years \pm 5 years, the majority being in the 4th decade of life constituting 300 patients (60%). Also our study showed that the causes of the postoperative complication are postoperative pain 132 patients (26.4%), the next was infection 45 patients (9%), bleeding 34 patients (6.8 %), followed by anal spasm 15 patients (3%), recurrence 12 patients (2.4%), and anal stenosis 9 patients (1.8%)

Conclusion: 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.

Keywords: Haemorrhoidectomy, complication, bleeding.

Introduction

The anal canal is about 1.5 inch (4 cm) long and passes downward and backward from the rectal ampulla to the anus [1]. Its lateral walls are kept in position by the levatores ani muscles and the anal sphincters [1]. The mucous membrane of the upper half of the anal canal is derived from hindgut endoderm, the nerve supply is derived from the autonomic hypogastric plexuses and It is sensitive only to stretch [1]. The mucous membrane of the lower half of the anal canal is derived from ectoderm of the proctodeum, the nerve supply is from the somatic inferior rectal nerve and it is thus sensitive to pain, temperature, touch and pressure. [1] The anus or lower opening of the anal canal lies in the midline and on each side is the ischiorectal fossa, the skin around the anus is supplied by the inferior rectal (hemorrhoidal) nerve [1]. The blood supply to the upper anal canal is from the superior rectal artery (derived from the inferior mesenteric artery) whereas the lower anal canal is supplied by the inferior rectal artery (derived from the internal iliac artery) [2]. The anal veins are distributed in a similar fashion to the arterial supply, the upper half of the anal canal is drained by the superior rectal veins, tributaries of the inferior mesenteric vein and thus the portomesenteric venous system, and the middle rectal veins, which drain into the internal iliac veins, the inferior rectal veins drain the lower half of the anal canal and the subcutaneous perianal plexus of veins, they eventually join the internal iliac vein on each side [3]. The venous drainage follows suit and represents a site of portosystemic anastomosis [2]. At the anal canal is formed by the superior rectal (portal) and middle and inferior rectal veins (systemic) [2]. The word Haemorrhoids is derived from Greek word Haima (bleed) + Rhoos (flowering), means bleeding, the pile is derived from the latin word (pila) means Ball [4]. Haemorrhoid may be classified according to their relationship to the anal orifice into internal, external, and interoexternal [5]. There are Four degrees of haemorrhoids,

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- First degree – bleed only, no prolapsed,
 - Second degree – prolapse but reduce spontaneously,
 - Third degree – prolapse and have to be manually reduced,
 - Fourth degree – permanently prolapsed [6].
 - The clinical features of haemorrhoid are, Haemorrhoids or piles are symptomatic anal cushions,
 - They are more common when intra-abdominal pressure is raised, e.g. in obesity, constipation and pregnancy,
 - Classically, they occur in the 3, 7 and 11 o'clock positions with the patient in the lithotomy position [6].
- The Symptoms of haemorrhoids,
- Bright-red, painless bleeding
 - Mucus discharge,
 - Prolapsed,
 - Pain only on prolapsed [6].

Patients and Method

This prospective randomized study was carried out in the Department of Surgery, Jenen private hospital. Included in the study were 500 consecutive patients of symptomatic grade III and IV hemorrhoids who were receiving Ligasure hemorrhoidectomy. The patients were admitted in the Surgery Ward on the morning of the procedure and discharged the next day except when they had to stay longer for a post-operative complication. All procedures were carried out under local anaesthesia administered by the surgical team. The procedure was carried out with the patient in lithotomy position and a slight reverse Trendelenberg tilt. The initial steps in procedures were included: 1-Manual Anal sphincter stretching upto 4 fingers. 2-Delivery of hemorrhoidal masses with artery forceps, one being applied at the base of hemorrhoid, the other at the apex. 3-The Ligasure jaws of the handset were applied on the pedicle and the instrument activated by the foot paddle A computer controlled feedback loop automatically stopped the flow of energy when coagulation of the vessels and mucosa was achieved. Scissor was used to excise the hemorrhoid mass by cutting across the coagulated tissue seal. No sutures were applied as the Ligasure device also achieved mucosal fusion. Anal canal packing was not routinely done except when there was doubt regarding complete hemostasis.

Results

Five hundred patients were studied, the age ranged from 20 to 60 years, with a mean age of 30 years ± 5 years, the majority being in the 4th decade of life constituting 300 patients (60%) as showed in table 1. Also our study showed that the causes of the postoperative complication are postoperative pain 132 patients (26.4%), the next was infection 45 patients (9%), bleeding 34 patients (6.8 %), followed by anal spasm 15 patients (3%), recurrence 12 patients (2.4%), and anal stenosis 9 patients (1.8%) as showed in table 2.

Table 1: Age distribution.

Age group (Years)	No of patients	%
1-10	0	0%
11-20	0	0%
21 – 30	100	20%
31 -40	300	60%
41 – 50	60	12%
51-60	40	8%
Total	500	100%

Table 2: Causes postoperative complication

Causes postoperative complication	No of patients	%
Pain	132	26.4%
Infection	45	9%
Bleeding	34	6.8%
Anal spasm	15	3%
Recurrence	12	2.4%
Anal Stenosis	9	1.8%
Total	247	49.4%

Discussion

Symptomatic hemorrhoids are one of the commonest surgical afflictions. For grade I and II hemorrhoids conservative medical therapy is usually successful but grade III and IV hemorrhoids require surgical intervention. The therapeutic options include rubber band ligation, sclerotherapy, cryotherapy and photocoagulation. However hemorrhoidectomy of the Milligan and Morgan variety (open hemorrhoidectomy) or the Ferguson variety (closed hemorrhoidectomy) remain the gold standard. Recently stapled hemorrhoidectomy (MIPH) for prolapsed hemorrhoids has come into vogue but has not gained popularity because of technical and cost considerations. A modified electro-surgical device, the Ligasure™ (Valleylab, Boulder, CO, USA) has become available for the last decade as a ‘vessel-sealing system’. This system delivers electro-diathermy energy across it jaws much like a bipolar diathermy device with minimal lateral spread of current or heat. We used the Ligasure device for hemorrhoidectomy in grade III and IV hemorrhoids. The search of the most effective and less painful technique for the treatment of hemorrhoids is still a major concern for colorectal surgeons, the technique of LigaSure™ hemorrhoidectomy is just a new method to perform the classic operation described by Milligan and Morgan more than 70 years ago, this kind of surgical option still plays a significant role in the treatment of hemorrhoids, particularly for IV degree haemorrhoids [7]. And is still considered the most effective treatment in term of hemorrhoid relapse [8]. Although this technique is considered “invasive” compared to other less painful methods [9, 10]. It has been demonstrated to improve significantly postoperative pain, bleeding and, consequently, in-hospital stay compared to traditional diathermy Milligan–Morgan excision [11]. Besides the advantages for the patients, I would like to point out the major advantages for the surgeon. The possibility to perform a virtually bloodless operation makes the operation easier, quicker and safer thus justifying the increased cost of the LigaSure™ device compared to diathermy. The technique here described by Gianni Milito, one of the Italian pioneers of this surgery, is a detailed step-by-step description of the operation; however, it describes an ideal 3-pedicle hemorrhoidectomy which unfortunately is not the rule in our operating theatre. It could have been interesting to know Milito’s experience in case of intraoperative or postoperative bleeding. In case of uncontrolled bleeding one can prepare a classic diathermy on the operating setting, use a re-absorbable stitch or try again the LigaSure™ device. In the rare cases of persistent bleeding after repeated application of the LigaSure device, I put a re-absorbable stitch at the bleeding site. Another point to be stressed could be what to do in case of postoperative bleeding. An emergency re-operation, sometime during the night after the operation, is an unpleasant experience for the patients and the surgeons too and normally any attempt is made to prevent it. Its management is not

different from other post-hemorrhoidectomy bleeding: a conservative treatment could be adopted with the use of i.v procoagulants and local absorbable hemostat cellulose (Tabotamp, Johnson & Johnson, USA), but a surgical revision is mandatory if hemoglobin level falls down under 8 g/l. A hemoglobin level more than 8g/l is still acceptable if the bleeding is stopped but the patient cannot be discharged until a clear improvement and first defecation occur. Finally, the intensive aftercare protocol adopted by Milito clearly gives evidence about his concern on postoperative pain. In fact, although less painful than diathermy operation, LigaSure™ hemorrhoidectomy is painful in any case because of the opened wounds created in a very sensitive area like the anoderm. Besides classic pain killers, Milito suggests the use of glycerin trinitrate ointment. This has been indicated in a recent randomized controlled trial ^[12]. Based on the “opinion” that post-haemorrhoidectomy pain is due to sphincter spasm; furthermore, he suggests the use of metronidazole supposing that postoperative pain is due to infection at the site of anal wounds. The utility of this antibiotic-based approach was suggested in 1998 ^[12]. But has not be confirmed in a recent randomized controlled trial ^[13]. Although topical application of metronidazole ointment seems to reduce postoperative pain ^[14].

Conclusion

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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