Comparative study between Stapled Hemorrhoidopexy and LigaSure Haemorrhoidectomy

Peer review status:
No

Corresponding Author:
Dr. Salah Raslan,
Lecturer, Faculty of medicine, Ain Shams university, Faculty of medicine, Ain Shams university, Cairo, Egypt - Egypt

Submitting Author:
Dr. Mohammad Othman,
Assistant Professor, Al-Baha University, Saudi Arabia, Al-Hada - Saudi Arabia

Other Authors:
Dr. Hamed Abousteit,
Assistant Professor, Faculty of medicine, Ain Shams university, Faculty of medicine, Ain Shams university, Cairo, Egypt - Egypt
Dr. Ahmad Kamal,
Assistant Professor, Faculty of medicine, Ain Shams university, Faculty of medicine, Ain Shams university, Cairo, Egypt - Egypt

Article ID: WMC004984
Article Type: Clinical Trials
Submitted on: 28-Sep-2015, 07:27:27 PM GMT    Published on: 29-Sep-2015, 06:58:09 AM GMT
Article URL: http://www.webmedcentral.com/article_view/4984
Subject Categories: SURGERY
Keywords: Stapled Hemorrhoidopexy, LigaSure Haemorrhoidectomy, comparatively, Goligher's classification, haemorrhoids

How to cite the article: Abousteit H, Raslan S, Kamal A, Othman M. Comparative study between Stapled Hemorrhoidopexy and LigaSure Haemorrhoidectomy. WebmedCentral SURGERY 2015;6(9):WMC004984

Copyright: This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC-BY), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Source(s) of Funding:
None

Competing Interests:
None known
Additional Files:
Figures 1, 2, 3, 4
Figures 5 and 6
Tables
Comparative study between Stapled Hemorrhoidopexy and LigaSure Haemorrhoidectomy

Author(s): Abousteit H, Raslan S, Kamal A, Othman M

Abstract

This is a prospective study aimed to compare the results of stapled hemorrhoidopexy with LigaSure Haemorrhoidectomy. This study included 50 patients who were divided into 25 patients underwent stapled hemorrhoidopexy and 25 patients underwent LigaSure Haemorrhoidectomy. Operation time and postoperative progress was assessed. Postoperative pain was assessed using visual analogue scale. Patients were followed for six month. The majority of patients were males; 12 patients had grade III haemorhoids and 38 patients had grade IV haemorrhoids. Mean age was 43 years. The average operating time was 45.5 minutes for stapled hemorrhoidopexy and 35.5 minutes for LigaSure haemorrhoidectomy. The average pain scores on postoperative day 1, day 2 and day 3 were 2.5 and 2 for stapled hemorrhoidopexy while for LigaSure haemorrhoidectomy were 5.5 and 5.

Stapled hemorrhoidopexy offers much less pain when compared to LigaSure haemorrhoidectomy and allow early return to work.

Introduction

Haemorrhoidal disease is one of the commonest colorectal disorders (1). Haemorrhoids can occur at any age, but the peak incidence is found in the 5th decade of life (2). Internal Haemorrhoids result from chronic engorgement of the three submucosal venous plexi of the anal canal and originate above the dentate line (3). With weakening or fragmentation of the supportive connective tissue framework combined with the repeated passage of hard stools and straining producing a shearing force, these vascular cushions descend and prolapse (4).

The degree of resultant prolapse is used to grade internal haemorrhoids using Goligher’s classification system: grade I haemorrhoids non-prolapsing; grade II haemorrhoids prolapse on straining but reduce spontaneously; grade III haemorrhoids require manual reduction; grade IV haemorrhoids are non-reducible (5).

Symptoms resulting from internal haemorrhoids are commonly bright red bleeding per rectum, mucosal prolapse, protrusion or pruritus ani (3). Pain is not characteristic unless there had been thrombosis or strangulation of the haemorrhoids which possibly can lead to gangrene (6).

Surgical intervention is usually the treatment of choice for grade III to IV haemorrhoids, prolapsed grade II that have failed to respond to non-surgical treatments and circumferential grade II haemorrhoids (7).

Stapled hemorrhoidopexy (SH) reduces haemorrhoidal tissue prolapse by excising a ring of the prolapsed anal mucosa above the dentate line using specific stapling device (8). Ligasure haemorrhoidectomy (LH) uses the LigaSure vessel sealing system, which consist of a bipolar electro-thermal hemostatic device that allows complete coagulation of vessels up to 7 mm in diameter with minimal surrounding thermal spread and limited tissue charring (9).

This study was done to compare the results of two techniques of haemorrhoidectomy.

Methodology

This study was conducted in El Demerdash and Ain Sham Specialized Hospitals during the period from April 2011 till April 2013. Patients with 3rd and 4th degree haemorrhoids were chosen. Patients aged between 20-60 years of both genders having no systemic illness were included and informed consent was obtained. Participants were divided into two groups; group A included 25 patients who underwent Stapled hemorrhoidopexy (SH) (Figures 1, 2 and 3). Group B also, included 25 patients who were treated with LigaSure haemorrhoidectomy (LH) (Figure 4). Surgery was done under either spinal or general anaesthesia according to the preference of the anesthetist.

In both groups patients were advised to receive laxatives for 2 weeks and daily sitz path after surgery. Variables noted were postoperative pain, bleeding and urinary retention. Pain was assessed with visual analogue scale.
Statistical methodology

Analysis of data was done by IBM computer using SPSS (statistical program for social science version 16) as follows;

- Description of quantitative variables as mean, SD and range.
- Description of qualitative variables as number and percentage.
- Chi-square test was used to compare qualitative variables between groups.
- Fisher exact test was used instead of chi-square when one expected cell less than 5.
- Unpaired t-test was used to compare quantitative variables between two groups.

P value 5% significance level.

Results

The demographics of our data showed that group A (SH) included 10 males (40%) and 15 females (60%) with age range 43.6±5 years, group B (LH) included 20 males (80%) and 5 females (20%) with age range 39.3±6 years (Table 1). In group A (SH) 20% were 3rd degree haemorrhoids and 80% were 4th degree, while in group B (LH) 28% were 3rd degree and 72% 4th degree with no statistical significance between both groups (P 0.17) (Table 2). Regarding operative time, group A (SH) had a relatively longer duration compared to group B (LH) (54% of patients were done in more than 40 minutes) with statistically significant difference (P 0.02) (Table 3) (Figure 5). Early postoperative pain was assessed using a visual analogue scale (VAS) in which group A (SH) had a relatively better VAS compared to group B with statistically significant difference (Day 1 P 0.22, Day 2 P 0.000002, Day 3 P 0.0001) (Table 4). Regarding the early post-operative complications, no patients developed incontinence to either gas or foeces and the other complications like urinary retention, secondary bleeding, wound problems (itching, irritation, moisture) the rate was near with no significant difference between both groups (P 0.55) (Table 5). There is a significant difference between the two groups as regard return to work (P 0.04), residual skin tags and prolapse which is lower in (LH) (P 0.04) (Table 7).

Discussion

The control of pain after haemorrhoidectomy has always been a major concern for surgeons and a major reason for refusing surgery for patients. Multiple complementary treatments have been proposed to decrease postoperative pain, including the use of different surgical instruments or associated procedures such as lateral internal sphincterotomy to reduce postoperative sphincter spasm. All of these treatments have yielded unsatisfactory results because the main unsolved problem is that the sensitive anal mucosa is severely traumatized during the removal of haemorrhoids. The operation proposed by Longo does not damage the anal mucosa, as resection is of a ring of insensitive mucosa above the dentate line.

The aim of this study was not only to compare postoperative pain after the stapled technique with LigaSure haemorrhoidectomy but also to assess the effectiveness of each technique as a definitive cure for haemorrhoids. A comparative evaluation of the results is difficult as the two operations have different aims: stapled haemorhoidopexy removes the prolapse, whereas LigaSure haemorrhoidectomy eliminates the haemorrhoids directly to resolve the symptoms of prolapse and bleeding. Therefore, evaluation of the symptoms seems more useful than a purely anatomical evaluation of the two techniques.

With regard to the operating time, it was significantly longer in stapled haemorrhoidopexy which is the same when compared to other studies like Basdanis et, al (10) and Chen et, al (11). Regarding postoperative pain, visual analogue scores at 24, 48, and 72 hours post-surgery were significantly more favorable in stapled group, when compared to LigaSure group. The reason for the decreased pain in stapled group is that it doesn’t involve the mucosal below the dentate line. Mean pain scores in the other studies like those of Basdanis et, al (10) and Chen et, al (11), have shown that the post-operative pain is less with stapled technique, which is the same like our study.

With regards to the early post-operative complications, urinary retention was showing no statistically significant difference between the two groups. These results were the same like Arslani et, al (12). As regards to post-operative bleeding, there were three cases in group A and two cases in group B with no significant differences between both groups. Bleeding
was minimal like spotting in the first two post-operative days and didn’t require any surgical intervention. No cases were reported as regard incontinence. But as regard wound problem, there were five cases reported including irritation, itching and moisture in group B and only one case in group A. Cases of wound problems were more with Basandis (10) where 6 cases reported in stapled group and 39 cases in LigaSure group.

Regarding post-operative complications, there were four cases reported of residual skin tags or prolapse. This might have been because stapled haemorrhoidectomy doesn’t excise the haemorrhoids but rather a circumferential column of mucosa and submucosa 2-3 cm above dentate line and then staple the defect. Besides, it doesn’t deal with external haemorrhoids or associated anal canal problems (13, 14). However, patients with 4th degree haemorrhoids usually present with large unequally sized prolapsing piles and Chen et al (11) proposed one modified with one to four additional traction sutures placed at sites about 1 cm below the level of the purse string suture for those prominent haemorrhoidal positions. This helped to incorporate more distal components of internal haemorrhoids into the "stapler housing" and facilitated further resection. It was also able to pull the external components or skin tags into the anal canal and made the anal surface smooth.

Regarding recurrence, one case was reported in stapled group (defined as: recurrent symptoms or new prolapse, but not residual prolapse or skin tags). Some studies found that the residual prolapsed piles could cause recurrent symptoms. (15, 16). On the contrary LigaSure haemorrhoidectomy is more appropriate to treat anatomical deformities such as skin tags and prolapse considering that the surgical principle in LigaSure haemorrhoidectomy is more similar to the conventional haemorrhoidectomy. The duration of hospital stay was less in stapled group. The prolonged hospital stay in the other group was due to the post-operative pain and wound problems. The early return to work noted in the stapled group was due to less postoperative pain and no external wound.

A limitation of the present study can be identified in the small size of the sample.

Conclusion

LigaSure haemorrhoidectomy and stapled hemorrhoidopexy yield comparable good results, with a short operative time and minimal side effects in the treatment of grade III and IV hemorrhoids. Both procedures offer low levels of postoperative pain but, Stapled hemorrhoidopexy offers much less pain when compared to LigaSure haemorrhoidectomy and allow early return to work. A larger controlled study is needed to reach solid conclusions regarding risk of postoperative recurrence of haemorrhoidal prolapse.

References

8. Treatment of hemorrhoids disease by reduction of mucosa and haemorrhoidal prolapse with a circular suturing device; a new procedure. 1998.
14. Oughriss M, Yver R, Faucherou JL. Complications

15. Ho YH, Cheong WK, Tsang C, Ho J, Eu KW, Tang CL, Seow-Choen F. Stapled haemorrhoidectomy, cost and effectiveness. Randomized, controlled trial including incontinence scoring, anorectal manometry, and endoanal ultrasound assessments at up to three months. Discussion on Colon and Rectum 2000; **43**: 1666-1675