ORIGINAL ARTICLE

Stapled Hemorrhoidopexy versus Traditional Hemorrhoidectomy: A Comparative Study of two Procedures in Advanced Hemorrhoids

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ABSTRACT

Aim: To prove that stapled hemorrhoidopexy has better clinical outcome and lesser complications as compared to traditional hemorrhoid surgery.

Methods: This randomized controlled study was single blind and parallel group in nature. It was done in Mayo Hospital, Lahore from 2nd January 2013 to 18th March 2014. Two hundred and fifty eight adult patients aged 16 years or older suffering from advanced hemorrhoids were included. They were divided in two groups; each group comprised equal number of patients. Group A receive either traditional hemorrhoidectomy (TH) and group B received stapled hemorrhoidopexy (SH). These patients were followed up for 2 years after surgery (till 01-04-16). Out of 258 patients, 50 patients lost for follow up. Our variables of interest were recurrence, duration of surgery, post-operative pain and bleeding.

Results: In TH group, 6.7% patients developed recurrence while it was 17.3% in SH group (2 sided sig. 0.019). Duration of surgery was significantly longer in TH group (mean time 30.4±5.3min) while in SH group it was 20.8±3.1min. Post operative pain was determined by using visual analogue scale (VAS). Mean VAS in TH group was 7.4±1.2 while in SH group, mean VAS was 7.1±1.3 (p-value 0.026). In TH group, 9.3% patients experienced post operative bleeding while in SH group, it was 3.9% (2 sided sig. 0.079).

Conclusion: Stapled hemorrhoidopexy had lesser overall complications than traditional hemorrhoidectomy seen on short term follow up. On the other hand, recurrence rate was more in the SH group than TH group. As recurrence is a long term complication so TH must be considered a much better surgery than SH.

Keywords: Hemorrhoids, Stapled hemorrhoidopexy, Hemorrhoidectomy

INTRODUCTION

Distension and engorgement of venous plexuses over the anal cushions is called hemorrhoids[1]. Number of factors is involved in the pathogenesis of hemorrhoids. One of the main factors is rupture of supporting connective tissue, which results in descent and hemorrhage of anal cushions.[1] Hemorrhoids occurs commonly in adults affecting 44.7% of people worldwide[1].

There are four degrees of haemorrhoids according to the severity of the disease. Management of haemorrhoids depends on its degree[2]. First degree haemorrhoids (FDH) are characterized by only bleeding and no prolapse.[2] Symptomatic management by taking conservative measures i.e., high fibre diet and stool softeners is considered efficacious for FDH[3]. Bleeding with prolapse only during defecation represents second degree haemorrhoids (SDH)[2]. Injection sclerotherapy and band ligation have remarkable effectiveness for SDH[4,5]. Advanced disease with considerable prolapse, haemorrhage and other complications requiring intensive surgical procedure depicts third and forth degree haemorrhoids[2]. Hemorrhoidectomy is commonly done for managing third and forth degree of haemorrhoids. Hemorrhoidectomy is a surgical method consisting of removal of prolapsed part of haemorrhoid followed by ligation at its base.[6] Post operative agonizing pain, haemorrhage, retention of urine and recurrence are strongly associated with this procedure[7]. Stapled hemorrhoidopexy and ligation of hemorrhoidal artery are newer evolved procedures with considerable lesser chances of complications and better outcomes[8,9].

In stapled hemorrhoidopexy anal cushions are placed back to their anatomical position after excising band of mucosa from the distant part of rectum[10]. This results in decrease in blood flow to the anal cushions by relieve of sphincter pressure to haemorrhoids[10]. This procedure is associated with reduced pain post operatively, faster recovery and less hospital stay[10,11].

SH is practiced commonly all over the world with satisfactory results but because it is newly introduced technique, data is deficit in our system. This study was planned to compare this newer procedure with the traditional one and to estimate whether it can replace the conventional technique of hemorrhoidal surgery.

MATERIALS AND METHODS

The study was carried out in North Surgical Unit and West Surgical Unit of Mayo hospital, Lahore from 2nd January 2013 to 18th March 2014. It was a single blind, parallel group randomized controlled trial conducted in 258 patients. The patients were divided by simple random sampling into two groups using random number tables. The patients were placed in two groups without discrimination of age, sex and grade of haemorrhoids to avoid the selection bias. Informed consent was taken from the patients concerning hemorrhoidal surgery without notifying about the type of procedure to be performed on them.

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To avoid financial burden on patients the stapling guns and the surgical threads were provided from the hospital budget. This study was approved by ethical committee of Mayo Hospital, Lahore. Adult patients of more than 16 years of age with grade 3 and 4 haemorrhoids were included in the trial. Patients with haemorrhids of advanced degree after previous rubber band ligation or injection sclerotherapy were also incorporated in our trial. The patients who were operated in the past by anyone of two methods of hemorrhoidectomy and again presented with recurrence were not included in the study. Known cases of any local pathological disorder like ulcerative colitis or rectal or anal canal carcinoma were also suspended. Other criteria of exclusion involved patients taking anti coagulants or anti platelets, cases with thrombosis of haemorrhoids, concomitant fistula in ano, fissure in ano, or perianal abscess. All patients complying with inclusion criteria were admitted into the surgery ward though OPD. Appointed registrar of respective surgical unit carried out patient randomization within the ward. Both procedures of hemorrhoidectomy were done by consultant surgeons of respective units. To eradicate the experience bias no surgery was carried out by any surgical registrar or post graduate trainee.

In TH group, conventional open or closed mode of hemorrhoidectomy was performed on patients. In SH group, stapled hemorrhoidopexy was done. Nature of anaesthesia and form of surgery were documented before operation on the same day. Inj. Metronidazole 500 mg and Inj. Cephtriaxone 1 gm were infused after giving test dose to the experimental subjects preoperatively. Time of surgery was also noted during surgery. Immediately after surgery, pain and amount of bleeding were noted. At the time of discharge from hospital, thorough profile of the patient was registered including contact numbers and postal address of the patient and two close relatives. Patients were advised to return 10 days post surgery for follow up to see any complication. They were inquired on telephone at 6, 12 and 24 months about the recurrence of haemorrhoids. All the collected data was entered and analyzed using SPSS-20.

RESULTS

In TH group, 112 (86.8%) experimental subjects were male and 17 (13.2%) were female. 115 male patients (89.1%) and 14 female patients (10.9%) were present in SH group. 43.9±12.4 years was the mean age in patients included in TH group while it was 40.3±13.1 years in SH group (Table 1).

Traditional haemorrhoidectomy lasted longer (mean time 30.4±5.3min) in contrast to stapled hemorrhoidopexy (20.8±3.1min). Statistically signification difference was noted between the time duration of two methods of haemorrhoidectomy (p-value 0.001) (Table 2).

Post operatively, pain was the main problem which was analysed by visual analogue scale (VAS). In TH group, mean VAS was 7.4±1.2 whereas in SH group, mean value of VAS was 7.1±1.3 (p-value 0.026) (Table 3).

Extent of post operative bleeding was noted between the individuals of two groups. Incidence of bleeding immediately after surgery was identified in 9.3% of patients (12 out of 129) in TH group as compared to 3.9% in SH group (5 out of 129). Chi square test was applied to compare post operative bleeding between individuals of two groups, the 2-sided significance was 0.079 (Table 4).

Main issue of concern in this trial was the recurrence at 6, 12 and 24 months after surgery. Patients were not followed after the interval of 24 months. During the period of follow up, 25 patients of TH group lost for follow up while 25 patients from SH group lost for follow up. 208 patients were interviewed for recurrence. Recurrence was observed in 9.6% (10 out of 104) of individuals in TH group and in 25.0% (26 out of 104) of patients in SH group. 0.003 was the 2 sided significant determined through Chi square test (Table 5).

Table 1: Gender distribution

Gender	TH Group		SH Group	
	No.	%	No.	%
Male	112	86.8	115	89.1
Female	17	13.2	14	10.9

Table 2: Duration of surgery

	TH Group	SH Group	P value
Duration of surgery (min)	30.4±5.3	20.8±3.1	0.001

Table 3: Post operative pain

	TH Group	SH Group	P value
Post-operative pain	7.4±1.2	7.1±1.3	0.026

Table 4: Incidence of post operative bleeding

Incidence	TH Group	SH Group	Chi square
Post-operative bleeding	12 (9.3%)	5 (3.9%)	0.079

Table 5: Recurrence of hemorrhoids

Recurrence	TH Group	SH Group	Chi square
At 6 months	2	11	0.003
At 12 months	7	15	
At 24 months	1	-	
Total	10 (9.6%)	26 (25%)	

DISCUSSION

Hemorrhoids are dilated and engorged veins over anal cushions.[12] In addition to dietary modifications. Various treatment options for hemorrhoids include sclerotherapy, rubber band ligation, cryotherapy, radiofrequency ablation, plication, excisional hemorrhoidectomy and stapled hemorrhoidopexy[13]. This study was planned to compare stapled hemorrhoidopexy and traditional hemorrhoidectomy and their relation to recurrence, pain and bleeding.

Our trial demonstrated that stapled hemorrhoidopexy (SH) had significantly higher recurrence rate (25%) as compared to traditional hemorrhoidectomy (TH) (9.6%) at 2 years follow up. These results were found comparable with another study in which recurrence occurred at the rate of 32% with SH versus 14% in TH[14].

Recurrence was greater with stapled hemorrhoidopexy because anal cushions were not removed and they prolapsed again after few months[15]. Partial excisions of anal cushions was done in TH, so recurrence was found in less no of patients[16].

In this study, mean duration of SH was (20.8±3.1min) which is significantly less than TH (30.4±5.3min) (p-value 0.001). The similar results were demonstrated in another study done by Sachin and Muruganathan.[17] Less duration of surgery in SH is due to minimal dissection, less handling of the vascular structures, not dissecting the anal cushions rather removing a round margin of mucosa above the prolapsing hemorrhoids[18].

In this study post operative complications (postoperative pain and bleeding) were found more in TH than SH group. Post operative pain determined by visual analogue scale (VAS) in TH group (7.4±1.2) was higher than pain in SH group (7.1±1.3) (p-value 0.026). Another study exhibited higher pain score with TH (2.89±0.86) as compared to SH (1.78±0.77).[17]

Incidence of post operative bleeding was also found significantly higher in TH group (9.3%) as compared to SH group (3.9%). Another similar study demonstrated post operative bleeding in 22% of patients in TH group in 14% of patients in SH group.[17]

SH is found to be more suitable procedure for hemorrhoids than TH in terms of short term outcomes. These short term outcomes can be managed conservatively by advising analgesics for post operative pain; and packing the rectum to control post operative bleeding[19].

In SH group, more chances of recurrence were found which is a long term complication. Patient has to be operated again in case of recurrence. . The exertion, physical mental strain, financial load carried by the patient, attendants, doctor, staff and hospital in case of re-operation is much more destructing than the easily manageable short lived post operative complications.[15]

The fanciness of stapling gun caused cost factor crucial and it out weights other factors in this trial. The thread needed in TH is very economical (40 times low priced than the stapling gun)[19]. Cost of the surgery matters a lot in Pakistan.

This study carried certain limitations like it does not cover a common complication of anal incontinence which occurs post operatively after SH[20,21]. Anal cushions are responsible for maintaining continence and their prolapse in haemorrhoids interfere with its plugging mechanism.[19] A common complication in TH is sphincter injury also not evaluated in this study[22]. Considering advantages and disadvantages of both surgeries newer procedures like hemorrhoidal artery ligation should be analysed and compared with conventional techniques[23].

CONCLUSION

Traditional haemorrhoidectomy is preferable surgical procedure for haemorrhoids because of fewer chances of recurrence and cost effectiveness. Less pain and bleeding are noted in case of Stapled hemorrhoidopexy but these complications can be treated conservatively. SH is related to high rate of recurrence and also expensive.

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