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To Evaluate The Outcome of Stapled Haemorrhoidopexy in Patients of Haemorrhoids- A Prospective Study

KEYWORDS: haemorrhoids, stapled haemorrhoidopexy, conventional haemorrhoidectomy

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ABSTRACT *AIM AND OBJECTIVES: - To evaluate the outcome of stapled haemorrhoidopexy in patients of haemorrhoids.*

MATERIALS AND METHODS - Present prospective study included 40 patients with grade 2 and grade 3 haemorrhoids. These patients were admitted in surgical ward in GMC Jammu. All the patients were subjected to same spinal anesthesia, antibiotic, and analgesia.

EXCLUSION CRITERIA- patients with malignant lesion, inflammatory bowel disease, grade 1 and grade 5 hemorrhoids, history of previous surgery on anorectum.

RESULT AND CONCLUSION: - Stapled haemorrhoidopexy is a safe procedure with lesser complication, significantly less operative time, lesser analgesic requirement, early discharge and early return to work as compared to conventional haemorrhoidectomy

INTRODUCTION

Haemorrhoids (Greek: Haima = Blood, rhoos = flowing). Synonym: piles (Latin Pila = a ball) are dilated veins occurring in relation to the anus. These are cushions of submucosal tissue containing venules, arterioles and smooth muscle fibers that are located in the anal canal. Haemorrhoids are likely the result of a sliding downwards of these anal cushions. Symptoms may be bleeding per rectum, pain and discomfort in perianal region, mucosal discharge, itching, complication such as prolapse, strangulation, thrombosis, ulceration, gangrene, portal pyemia is sometime seen.

Every therapeutic modality has advantage and disadvantage among such methods are medical management, banding injections sclerotherapy, bipolar diathermy, infra red photocoagulation, cryosurgery, open haemorrhoidectomy. Medical management, sclerotherapy and banding require multiple sitting to treat and take long time for recovery.

Surgical haemorrhoidectomy is the most effective treatment for haemorrhoids – overall. 40% of the patients with haemorrhoids require surgery (MacRae HM, Templeton LK et.al. 2002). Various surgical procedures like closed and open techniques are available but Miligan – Morgan open haemorrhoidectomy is the most popular technique. Though it has very good results but it has a reputation of being one of the most painful surgical procedures. It results in hospital stay for 6 to 10 days and time off work for two to six weeks.

With the quest to provide a painless post – operative-period to the patient of haemorrhoids, a novel technique was introduced in 1993; Longo &Milito technique of- staples haemorrhoidopexy which later adopted in Europe.[1] It is indicated for all the patients who require surgical excision for treatment. However as the excision of mucosa is well above the painful anoderm, it avoids excision below pain sensitive dentate line, so there is very less operative pain. It is easy procedure, quick to perform, comfortable for patients, hospital stay is less, early discharge from hospital and there is early return to normal activities ,following stapled haemorrhoidopexy. However complication may be bleeding, pain, rectal perforation, and late complications such as rectal stenosis are sometime seen following stapled haemorrhoidopexy.

MATERIAL AND METHODS

The study was conducted in the Department of Surgery, GMC Jammu for a period of one year w.e.f. 1st November 2014 to 31st October 2015. A total of 40 patients with Grade II or Grade III internal haemorrhoids in age group of 20-70 years were included in the study group. Patients with malignant lesion found on colonoscopy, associated inflammatory bowel disease, and associated Grade I haemorrroids, history of previous surgery on anorectum and Grade IV haemorroids were excluded from the study group. Oral laxative tablets were given followed by administration of sodium phosphate (proctoclysis) enema, on the morning of the surgery. Similarly, the Visual Analog Scale for recording post-surgical pain was explained to the patient, where 0 stands for no pain and 10 stands for maximum pain.

All patients were operated under spinal anaesthesia in lithotomy position. The Proximate Haemorrhoidal Circular Stapler (HCS) was used. After firing, the stapler was held in position for 2 minutes and then withdrawn after partial untwisting and the doughnut examined for completeness.

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Dressing was applied and operative time and blood loss was assessed and recorded.

Pain was assessed at 6 h, 12 h, 24 h and 48 h, as per Visual Analog Scale. Inj. Diclofenac Sodium, 75 mg intramuscular, was administered to all patients who had a VAS score of >4 and oral NSAID combination of Ibuprofen 400mg with Paracetamol 500mg) was given to those with VAS scores below that. The primary outcome measures assessed were the post-operative pain, duration of hospital stay and time

taken to resume normal activities and work. The follow up for post-operative complications like anal stenosis, incontinence to stools/flatus, post-operative urinary retention was accessed during OPD visits and also by telephonic interview of the patients.

OBSERVATIONS AND RESULTS

AGE: A total of 40 patients were included in the study group. The mean age was 45.475 years with standard deviation 10.546 years. The youngest patient in our study group was 23 years old male while the oldest patient was a 66 year old male patient.

Table 1. Age distribution of patients in study group

Age (in years)	Male patients (n) (%age)		Female patients (n) (%age)		Total (n) (%age)	
11- 20	-	-	-	-	-	-
21-30	2	5%	-	-	2	5%
31-40	6	15%	3	7.5%	9	22.5%
41-50	10	25%	8	20%	18	45%
51-60	5	12.5%	3	7.5%	8	20%
61-70	3	7.5%	-	-	3	7.5%
TOTAL	26	65%	14	35%	40	100%

SEX: Out of study group of 40 patients, 26 patients were male and 14 patients were female As per observations, haemorrhoids are more common in males with male to female ratio of 1.85 : 1 in the study group SYMPTOMATOLOGY :The patients usually had one or a combination of symptoms at the time of presentation as depicted in the following table.

Table 2 : Symptomatology of Patients at Presentation

SYMPTOMS	No. of Patients	Percentage
Bleeding	30	75%
Prolapse	20	50%
Constipation	24	60%
Itching	10	25%

At presentation, most patients had combination of 2 or more symptoms with bleeding p/r and constipation being most common.

GRADE: Out of 40 patients, 13 had Grade II haemorrhoids and 27 had Grade III haemorrhoids.

Table 3. : Grade of Haemorrhoids in Patients in Study Group

Grade of Haemorrhoids	No. of Patients	Percentage
Grade II	13	32.5%
Grade III	27	67.5%

Grade III haemorrhoids were seen more commonly in the study group with ratio of Grade II to Grade III being 1: 2.07.

DURATION OF SYMPTOMS In the study group varying duration of symptoms was noted ranging from <1 month to >1 year as depicted in the following table.

Table 4: Duration of Symptoms in Patients at time of Presentation

Duration of Symptoms	No. of Patients	Percentage
< 1 Month	4	10%
1 Month- 6 Months	8	20%
Months- 1 Year	12	30%
>1 Year	16	40%

The largest group of patients (40%) had duration of symptoms > 1 year at time of presentation.

ASSOCIATED CO-MORBIDITIES :The following co-morbidities were found in the study group patients:

Table 5 : Associated co-morbidities in study group

Condition	No. of Patients	Percentage
Hb<10 gm%	8	20%
Diabetes	4	10%
Hypertension	8	20%
Benign Prostatic Hyperplasia	2	5%
Lung/Airway Disease	4	10%

OPERATIVE TIME: In our study group, the mean operative time was **45.03** minutes with a standard deviation of **6.314** minutes while the range was **30 to 60** minutes with maximum operative time being 60 minutes.

Table 6 : Operative time in Patients in Study Group

Operative Time (minutes)	No. of Patients	Percentage
30 to 35	2	5%
35 to 40	6	15%
40 to 45	14	35%
45 to 50	10	25%

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50 to 55	5	12.5%
55 to 60	3	7.5%
Total	40	100%

COMPLICATIONS : The complications of the procedure can be divided into :-

Intra-operative Complications : Complications occurring during operation of the patients Early Post- operative Complications : Complications arising within 1 week of operation Late Complications

Table 7: Intra –operative Complications seen in the Operated Patients

Complications	No. of Patients	Percentage
Haemorrhage	1	2.5%
Perforation	0	0
Injuries to Adjoining Structures	0	0
Total	1	2.5%

Table 8 : Early Post- operative Complications

Complications	No. of Patients	Percentage
Haemorrhage	1	2.5%
Urinary Retention	2	5%
Rectal Pain	1	2.5%
Post –Spinal Headache	0	0
Total	4	10%

Table 9 : Late Complications seen in the Operated Patients

Complications	No. of Patients	Percentage
Anal Stenosis	0	0
Incontinence	1	2.5%
Anal Tags	0	0
Total	1	2.5%

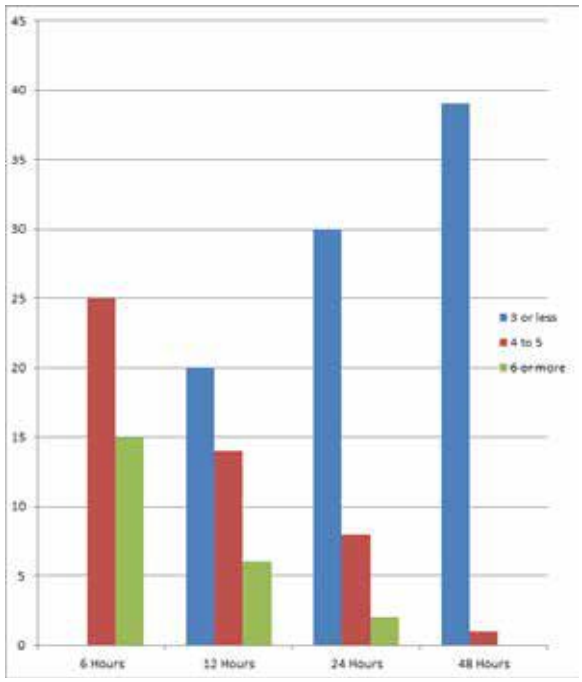
POST-OPERATIVE PAIN :The post-operative VAS (Visual Analog Score) at 6 hours, 12 hrs, 24 hrs and at 48 hrs is depicted in Fig 9.1. In first 24 hours, 15 patients required a single dose of Injection Diclofenac Sodium while 20 patients required two doses and 5 patients had to be given three doses. In the next 24 hours, the corresponding figures were 12 patients requiring single dose, 4 requiring two doses and none requiring three doses.

Table 10 : Post-operative VAS Score

Post-operative VAS Score	Number of Patients			
	After 6 hours	After 12 hours	After 24 hours	After 48 hours
</= 3	0	20	30	39
4-5	25	14	8	1
>/= 6	15	6	2	0

In all patients analgesic used was Inj. Diclofenac Sodium via intramuscular route.

Fig. 1.: Post Operative VAS Score



DURATION OF HOSPITAL STAY :(Number of days to-discharge from hospital) The maximum duration of hospital stay after surgery was 5 days and minimum being 2 days with mean duration of hospital stay being **2.58** days with standard deviation of **0.831** days.

Table 11 : Duration of Stay in Hospital

Variable	Time (in days)
Range	2 to 5
Mean +/- S.D.	2.58 +/- 0.83

Table 12 : Duration of Hospital Stay Post-operatively

No. of Days in Hospital Post-operatively	No. of Patients	Percentage
2	11	27.5%
3	24	60%
4	3	7.5%
5	2	5%
Total	40	100%

NO. OF DAYS TO RETURN TO WORK The mean interval of days to return to work was **5.6** days with a standard deviation of **0.92** days and the minimum period being 4 days with maximum period being 8 days.

Table 13 : Number of Days to Return to Work

Variable	No. of days
Range	4 to 8
Mean +/- S.D.	5.6 +/- 0.92

DISCUSSION

Haemorrhoids are one of the most common afflictions of human beings from time immemorial. Goligher reported that 40% of the population has symptoms due to haemorrhoids at some time of their lives.[2]

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In our study, the mean age of the patients was 45.47 years. The youngest patient in the study was 23 years and the oldest patient was 66 years old. Slawik S. et al in their study on 357 patients of haemorrhoids observed the mean age to be 46 years with age range of 28-92 years, which goes well with our study.[3] Law WL et al in their study on 48 consecutive patients of stapled haemorrhoidectomy found the mean age to be 46.6 years.[4]

The male: female ratio in our study was 1.85: 1. The males constituted 65% of the study group whereas females accounted for the rest 35% patients. Jaiswal SS et al in their study on 40 patients undergoing stapled haemorrhoidectomy observed that haemorrhoids afflicted males more than the females.[5] There were 85% males and 15% females in their study group. Shalaby et al in their study on 200 patients found out the male predominance in the study group.[6]

The most common complaint in our study group was bleeding and was observed in 75% of the patients. In the study group conducted by Ortiz et al, 84% of the patients presented with bleeding.[7] Bleeding was noticed in 65% of the patients in a study conducted by Shalaby et al.[6] Ho YH in his study on 119 patients with haemorrhoids documented bleeding in 80% of patients. [8]

In our study, 60% of the patients presented with the history of constipation. Thwayeb et al in a study on 40 patients with haemorrhoids observed that constipation was present in 75% of the patients.[9] Constipation was an associated complaint in 62% patients in the study of Shalaby.[6]

Third degree haemorrhoids were the commonest haemorrhoids requiring surgical treatment in our study and accounted for 67.5% of the patients. Hiremath B et al found third degree haemorrhoids to be present in 60% of the patients in their study group. [10] Mehigan et al and Ganio et al found that third degree haemorrhoids are the commonest haemorrhoids requiring treatment in their study groups.[11] 40% of the patients in our study group presented with duration of symptoms for a period more than one year. Hector Ortiz in his study reported the presence of symptoms in 46% of the patients for the duration of more than one year which matches our observation.[12]

In the study entailed, hypertension was found as an associated co-morbidity in 20% of the patients whereas diabetes was found in 10% of the patients. Low Hb. (20% patients),

BHP (5% patients) and lung and airway disease (10% patients) were the other co-morbid conditions observed in the patients forming the study group. Hiremath B et al (2012) found the co-morbid conditions as hypertension and diabetes to be present in 28% of their patients.[10] The mean operative time in our study was 45.03 +/- 6.31 minutes. Tjandra JJ et al (2007) in their review of patients who had undergone stapled haemorrhoidectomy found the mean operating time to be 21.35 minutes.[13] Hetzer FH (2002) et al found the mean operative time to be 30 minutes in their patients undergoing stapled haemorrhoidectomy.[14] Pernice LM et al (2001) found the mean length of the time for stapler haemorrhoidectomy to be 15 minutes in their patients of haemorrhoids.[15]

Intra operative haemorrhage was observed in 2.5% patients in our study group requiring oversewing of the suture line. In early complications (within one week of surgery), were urinary retention (5% patients), haemorrhage (2.5% patients) and rectal pain (2.5% patients). Oughriss M (2005) et al found the early complications to be bleeding (1.8%), severe anal pain (2.3%), urinary retention (0.9%) in their study group of 150 patients of stapler haemorrhoidectomy.[16] Ravo et al found incidence of urinary retention to be 1.5% in their patients of stapler haemorrhoidectomy.[17]

Late complication observed in our study group was incontinence. In our study rate of incontinence was 2.5%. In the study conducted by Oughriss (2005), rate of incontinence was 0.3%.[16] In the study conducted by Fueglistaler P et al (2007), rate of incontinence was 31%.[18] Pramateftakis MG (2010) reported incontinence and rate of incontinence was 13.3% in his study group.[19]

Rectovaginal fistula has been reported after stapled haemorrhoidectomy and represents a potentially devastating complication of treatment for a benign disease. None of our patients developed this complication (Pescatori M 2002). [20] Perforation of rectum is also a known complication but was not observed by us in any of our patients (Wong LY 2003).[21] Other complications such as pneumoperitoneum, pelvic sepsis and rectal obstruction have been reported but were not encountered by us.(Capriani S. 2002, Molly RG 2000, Ripetti V. 2002)[22]

Post-operative pain in our study group was assessed by VAS after 6, 12, 24 and 48 hours and our study VAS was <3 after 48 hours in 97.5% patients. In the study conducted by Jaiswal SS (2013), similar results were seen and post-operative VAS was <4 after 48 hours.[5] In the study of Senegore AJ (2004), post-operative VAS for pain after 48 hours was <4.[23]

The mean duration of hospital stay in our study was 2.58 days. In the study of Pramateftakis MG (2010), mean hospital stay was 1.2 days.[19] In the study conducted by Athar A et al (2009), mean hospital stay was 1.3 days.[24] Law WL (2003) in his study group observed the mean hospital stay of 1.9 days.[4]

The mean number of days to return to work in our study group was 5.6 days with a maximum period of 8 days and minimum of 4 days. In the study of Ortiz (2002), patients took 20-24 days to return to normal activity.[7] In another study of Slawik S (2007), normal work was resumed between 3 to 31 days.[3]

Stapler haemorrhoidectomy is fast replacing conventional haemorrhoidectomy in this era of minimally invasive surgery. It is a less painful alternative to conventional haemorrhoidectomy as only a circumferential portion of the lower rectal and upper anal canal mucosa and submucosa is excised and re-anastomosis is performed with a circular stapling device. As a result the prolapsed anal cushions get retracted to their normal anatomical position; moreover, the blood flow into these cushions is decreased due to the disruption of terminal branches of inferior haemorrhoidal artery. It does not disrupt the richly innervated perianal skin or anal canal tissue hence reducing post-operative pain. Due to these and other benefits, stapled hemorrhoidectomy is considered a safe and reliable alternative to conventional haemorrhoidectomy in the definitive treatment of haemorrhoids.

The following conclusions have been drawn :

As regards age and sex, haemorrhoids were found to be more common in older population and were more frequently seen in males.

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The most common symptomatology at presentation in our patients was bleeding per rectum and constipation in more than three-fourths of the patient group. Majority of our patients had grade lll haemorrhoids . Many of these patients had symptoms for more than one year before they presented to the hospital. All these were patients whose symptoms were not relieved by conservative measures like better local hygiene, better diet, stool softeners and avoiding excessive straining.

Among the associated co-morbid conditions, the commonest were hypertension, diabetes (which may have been due to the older age of the patients) and low Hb./Anaemia (most likely due to bleeding per rectum in these patients).

The time taken for surgery was significantly less than the time taken for conventional haemorrhoidectomy.

The patients had post operative VAS score <3 at 48 hours post-operatively which indicates less post-operative pain and also lesser analgesic requirement in these patients. So the stapled haemorrhoidectomy procedure gives the benefit of lesser post-operative pain, lesser analgesie requirement and more patient comfort with similar control of symptoms vis a vis conventional procedures.

Stapled haemorrhoidectomy is a safe procedure with lesser complications provided done by experienced persons.

Most of our patients were discharged on the 2nd to 3rd post-operative day and they resumed work by 4-8 days. Hence, this procedure is associated with a short hospital stay and faster ambulation as well as early return to work.

CONCLUSION:

Stapled haemorrhoidopexy is a safe procedure with lesser compliation, significantly less operative time, lesser analgesic requirement, early discharge and early return to work as compared to conventional haemorrhoidectomy

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