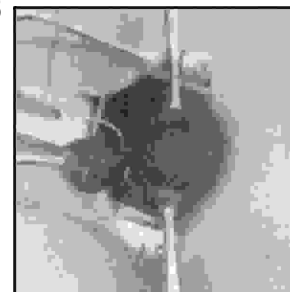


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## STAPLER HAEMORRHOIDECTOMY: A NOVEL AND SAFE TECHNIQUE



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**ABSTRACT ...** [sajid\\_sh@msn.com](mailto:sajid_sh@msn.com) [fakharhameed@hotmail.com](mailto:fakharhameed@hotmail.com) **Objectives:** To demonstrate advantages of stapler haemorrhoidectomy and its applicability to all patients who require surgical treatment of haemorrhoids. **Design:** Case Descriptive Study. **Place & Duration of study:** Allied/DHQ Hospitals, Faisalabad. (February 2004 – July 2005). **Patients & methods:** A total of 20 patients having grade III or IV haemorrhoids were included in the study. After a detailed GIT history, patients were subjected to standard stapler haemorrhoidectomy under regional anaesthesia. Patients were asked to record the postoperative pain intensity according to visual analogue score ranging from (0-10) on daily basis and the drugs required for pain control noticed. Patients were followed at weekly intervals for one month. Main outcome measures were postoperative pain, bleeding, sepsis, urinary retention, continence, relief of preoperative symptoms, operation time, hospital stay & recovery time. **Results:** Pain was the most common postoperative complication affecting 18 patients (90 %age). There was significant reduction in postoperative pain except for one patient in which pain was severe (VAS=8) due to technical error. Two patients developed urinary retention on the day of surgery. Postoperative bleeding was not observed in any of the patients. Pelvic sepsis & incontinence was not found in any patient. Preoperative symptoms were resolved in majority of the cases (80%age) with marked improvement in the rest(20 %age). The mean operative time was 17 minutes & mean hospital stay 1.3 days. Most patients were back to their work after 11<sup>th</sup> post operative day. **Conclusions:** Stapler Haemorrhoidectomy is a simple, quick & safe procedure that gives benefit in terms of reducing the postoperative complications namely pain & its sequelae with early return to activity. The vast majority of patients currently undergoing conventional surgical haemorrhoidectomy would be suitable for stapler approach, however the long term benefits need to be evaluated.

**Key Words:** Stapler Haemorrhoidectomy, haemorrhoids, postoperative complications.

### INTRODUCTION

Haemorrhoidal disease is very common in our surgical practice. Haemorrhoids are actually submucosal vascular cushions. These are normal anatomical structures and

are considered to play an important role in the continence of wind. There are three main anal cushions each fed by the terminal branches of haemorrhoidal vessels having lot of AV shunts. Haemorrhoidal disease is considered

secondary to sliding of these anal cushions because of weakening of the tissue anchoring them to underlying internal sphincter.

It is thought that 70% of adult population above 30 is affected with this disease. It is more common in males with peak incidence between 40-46 years of age. The most common symptom is bleeding per rectum which is bright red in color followed by mucous discharge, protrusion, perianal discomfort, hygienic problems and less commonly pruritis, pain and anemia.

According to degree of prolapse, haemorrhoidal disease is grouped in 4 stages;

1. First degree haemorrhoids bleed but do not prolapse.
2. Second degree prolapse usually on defecation but return to the anal canal spontaneously.
3. Third degree haemorrhoids require digital replacement.
4. Fourth degree consist of fixed prolapse of tissues that can not be digitally replaced.

For stage I haemorrhoids, conservative treatment including improved bowel habits and increased fluid intake is recommended. For stage-II and early stage-III different office procedures like banding or sclerotherapy are popular. But stage-III B and stage-IV require surgical intervention. Milligan Morgan method is still the gold standard.

Basic principles of these procedures are ligation of feeding vessels and excision of haemorrhoidal tissue. Modification to decrease postoperative pain included addition of lateral internal sphincterotomy, closed Haemorrhoidectomy, anal dilation and anal sphincter relaxants as well as the use of oral metronidazole. However numerous postoperative complications like bleeding, pain and unnecessary hospitalization urged the search for other less invasive procedures. Among these less invasive procedures Stapler Haemorrhoidectomy currently is the most favorite. It was first performed in Italy in 1980s but was popularized in 1993 by Antonio Longo. In this procedure, a circular surgical stapler is used to remove a ring of anorectal tissue above the

haemorrhoids. So it lifts and flattens the haemorrhoid and at the same time vessels feeding the haemorrhoid are severed.

The present study was conducted to analyze the complications after haemorrhoidectomy with stapler technique based on our clinical experience.

## PATIENTS & METHODS

From February 2004 to July 2005 a total of 20 patients underwent stapler haemorrhoidectomy in Allied/ DHQ hospitals Faisalabad. All were having grade III or IV disease.

A detailed history of GI tract including bowel habits, abdominal pain, mucous discharge, urgency and tenesmus was taken in each patient. Family history of colorectal polyps/carcinoma and IBS were also assessed. All patients above 40 years of age underwent preoperative sigmoidoscopy.

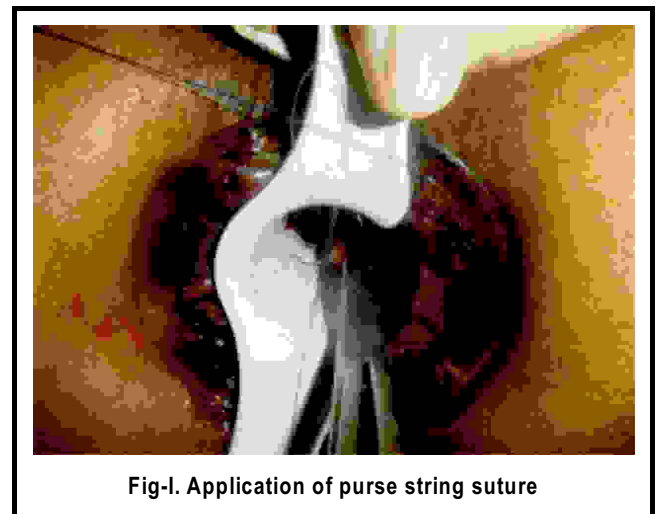


Fig-1. Application of purse string suture

After a detailed proctoscopic examination haemorrhoids were everted with three to four sutures. Then gentle dilatation of anal canal done with dilator. A purse string suture was applied 3-5cm above dentate line with prolene 2/0 involving mucosal and submucosal layers. Total 6-8 bites of tissues were taken throughout the circumference (Fig-1).

After this a maximally open Ethicon Endosurgery 33mm haemorrhoidal stapler was inserted in the axis of

instrument till the head is positioned proximal to purse string suture (Fig. 2).



Fig-II. Insertion of stapling gun



Fig-III. Positioning of stapling gun

Everting sutures were removed and haemorrhoids were repositioned back in the anal canal. And the stapler was closed to its maximum avoiding the pain sensitive area of the skin to be caught in between. While maintaining traction on the purse string suture stapler was fired (Fig. 3). The stapler was now partially opened and brought out by rotatory movements along with doughnut of excised tissue (Fig. 4). Final proctoscopic examination is done to see the anastomosis line and haemostasis.

Pain was measured with visual analogue scoring (VAS) for a period of 7 days after operation. Using the range of

values from 0 = No to 10 = the most severe pain. Patients were asked to record VAS value for the previous 24 hours as well as for defecation & drugs needed to control this pain were noted. Normal dietary habits along with stool softeners were advised on the morning of first post operative day. Patients were called for follow up at weekly intervals. All the information was recorded on a preformed Performa.

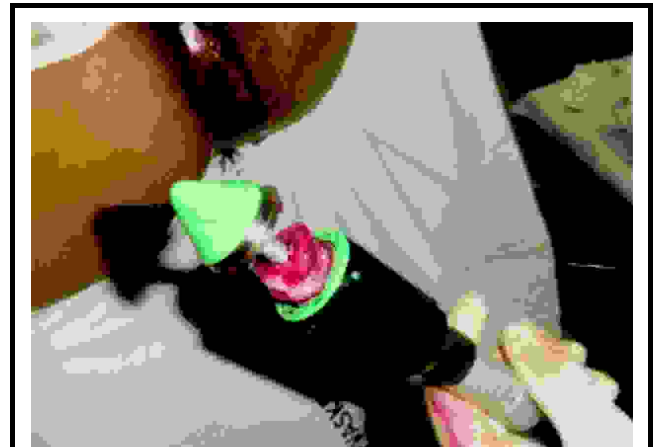


Fig-IV. Doughnut of excised tissue

## RESULTS

A total of 20 patients were studied for different postoperative complications after stapler haemorrhoidectomy. The average age was 35.4 years with a range of (24-62years). Out of these, 14 were males & 6 were females.

Pain was the most common postoperative complaint in 18 patients (90%) who required some sort of analgesia for pain control. Two patients (10%) experienced discomfort and did not asked for analgesia.

During the first 24 hours 14 patients had pain value in the range of 2.5- 4.5 and in another 5 patients it was in the range 4.5-5 (Table 1). In all these patients pain was easily controlled with Diclofenac tablets twice or thrice daily. Only in one patient the pain was severe VAS 8 as in this case skin below dentate line was caught in anastomosis. This patient required narcotic analgesics initially and some degree of pain persisted for about 10 days.

After 3<sup>rd</sup> postoperative day 19 patients were having pain value below 2.5 not asked for analgesia and all these 19 patients were virtually free of pain at 7<sup>th</sup> postoperative day.

**Table-I. Post-operative pain measurement by visual analogue scale (VAS) n=19**

Post operative day	Range of scale value	Average pain
0	2.5 - 5.0	4.5
1	2.5 - 4.5	4.0
2	2.5 - 3.5	3.2
3	1.5 - 3.0	2.4
4	1.5 - 2.5	2.2
5	1.0 - 2.5	1.9
6	1.0 - 1.5	1.3
7	0 - 1.0	0.7

Two patients developed urinary retention on the day of surgery and were catheterized for 24 hours. Catheter was removed after 1 day and they remained alright afterwards. Both were male and were operated under spinal anaesthesia. Some edema of anal and perianal skin was noticed in two patients and it resolved spontaneously in three to four days. There was minimal blood loss during surgery.

One patient developed small submucosal Haematoma but no treatment was required. Postoperative bleeding was not seen in any of these patients (Table II).

The main preoperative complaints in our patients were prolapse of haemorrhoids (20 patients), bleeding (19 patients), perianal itching (7 patients), perianal discomfort (9 patients) and hygienic problem (6 patients).

**Table-II. Postoperative complications**

Complications	No of pts	%age
Pain	18	90
Urinary retention	2	10
Edema of anal & perianal skin	2	10
Sub mucosal Haematoma	1	5

When received after one month of surgery the preoperative complaints were completely relieved except for presence of skin tags in 4 patients which were asymptomatic (Table III). No patient developed faecal incontinence. The mean operative time was 17 minutes (13 minutes to 25 minutes). The average hospital stay was 1.3 days. 19 patients were discharged after 1 day of postoperative admission. Most patients were back to their work after 11<sup>th</sup> postoperative day.

**Table-III. Symptoms comparison (n=20)**

Preoperative		One month post operatively		
Symptoms	No of pts	Persisted	Improved	Resolved
Prolapse of haemorrhoids	20	0	4	16
Bleeding	19	0	-	19
Perianal discomfort with pain	9	0	-	9
Perianal itching	7	0	-	7
Hygienic problems	6	0	-	6

## DISCUSSION

Haemorrhoidal disease is a common problem in surgical

practice. Occasional bleeding per rectum is treated conservatively usually by the general practitioners while

patients with more severe symptoms especially with grade III & IV disease need some intervention.

The history of Haemorrhoidal disease treatment dated back to the Hippocrates time, which termed anal channel bleeding as Haemorrhoids. In the ancient Egypt, India and Mesopotamia there were even specialist for the disease.

Now with the better understanding of Anorectal anatomy & Pathophysiology of haemorrhoidal disease many new treatment modalities have emerged for this disease. These include many office procedures e.g. Sclerotherapy, Rubber band ligation, Cryotherapy & Infra-red coagulation. But these procedures are mostly useful for 1<sup>st</sup> and 2<sup>nd</sup> degree haemorrhoids.

Although for stage-III & IV disease interventional methods like Milligan Morgan, Parks, Ferguson are still the gold standard, many minimal invasive procedures also developed in last 10 years or so. These include Doppler guided ligation of the branches of the haemorrhoidal arteries, ultra sound haemorrhoidectomy, Diathermy Haemorrhoidectomy and stapler Haemorrhoidectomy. Among these Stapler Haemorrhoidectomy is the most popular as it is easy to learn and perform, is less painful and restore the anatomy by lifting the anal cushions back to normal position (face lift operation for haemorrhoids) and at the same time divide all the feeding vessels to haemorrhoids.

The analysis of the postoperative complications in our study demonstrates that the pain is the most common cause of morbidity in 90% of the cases. But there is marked reduction in the intensity of pain as compared to open haemorrhoidectomy. As mentioned in literature, open haemorrhoidectomy has significant postoperative pain VAS (4-9) that needs regular strong analgesia in the form of injectables; most of the times narcotics<sup>1</sup>. While in our study, pain was easily alleviated by simple analgesics.

Similar results have been documented by others. Shalaby & Desoky conducted a trial in which 200 patients were randomized to either Milligan Morgan Haemorrhoidectomy or stapler technique<sup>2</sup>. Pain scores

were significantly lower in the stapler group after the first 24 hours, at the time of first bowel movement and at one week postoperatively.

In another study by Mehigan BJ & others, the VAS after stapler haemorrhoidectomy was 2.1 (0.2 to 7.6) while 6.5 (3.1 to 8.5) for open haemorrhoidectomy<sup>3</sup>.

Except for pain, other complications are less frequently observed in our study. Urinary retention in 2(10%), edema of anal & perianal region in 2(10%) and submucosal haematoma in 1 patients (5 %).

All the postoperative symptoms including bleeding, haemorrhoidal prolapse almost completely subside although some external tags may persist.

Longo published his study results in 1998. The study enrolled 144 patients for stapler haemorrhoidectomy. Pain was present in 79.2%, urinary retention in 9.7%, Edema of the anal & perianal region in 3.4 % & submucosal haematoma in 3.4% of the cases. The symptoms of bleeding present preoperatively in 70.1% persisted one month postoperatively in 2.97%, partially improved in 2.79% & completely resolved in 76.23%<sup>4</sup>.

Similarly Gravie et al concluded that effectiveness of stapler haemorrhoidectomy in relieving symptoms is equivalent to conventional surgery<sup>5</sup>.

Rosewell & colleagues observed in their study that stapler haemorrhoidectomy required less operating time, a shorter hospital stay & early return to full activity<sup>6</sup>. Our results are comparable to them in these respects. Similar results were also documented by Yau & others in their study<sup>7</sup>.

A study in Singapore on 35 patients with thrombosed prolapsed circumferential haemorrhoids showed that stapler may be used with safely in such cases<sup>8</sup>. No study shows major adverse side effects for stapler Haemorrhoidectomy in UK.

## CONCLUSIONS

Based on this study, conclusions are:

Stapler Haemorrhoidectomy is Minimal Invasive, safe, quick & simple procedure.

It eliminates most of the symptoms of haemorrhoidal disease including bleeding, prolapse and pain effectively. Further studies are required to evaluate the procedure for long term advantages.

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**WARM WELCOME IS  
ENCOURAGING,  
COLD WELCOME IS  
DISCOURAGING**