

Original Research Article


# A comparative study of Longo's procedure without stapler versus open hemorrhoidectomy in 2<sup>nd</sup> and 3<sup>rd</sup> degree hemorrhoids

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## Abstract

**Introduction:** Hemorrhoids are one of the commonest anal disorders that affect mankind from the dawn of the history. Traditional open hemorrhoidectomy has an evil reputation due to post operative severe pain. So to reduce the severity of postoperative pain, transanal hemorrhoidectomy (Longo's procedure) done by stapler device was evolved, which does not involve sensitive anal mucosa below the dentate line, but the disadvantage is its total operative cost. So it is not feasible in government hospital setup due to the high cost of stapler device. So, in this study, to minimize operative cost, we had operated patients of 2<sup>nd</sup> and 3<sup>rd</sup> degree hemorrhoids by Longo's procedure which was done manually without stapler, using the principle of Longo's procedure with stapler device of circumferential mucosectomy and manual hemorrhoidopexy and results were compared with open hemorrhoidectomy.

**Aim and objectives:** Aim of the study was to evaluate outcome of patients undergone Longo's hemorrhoidectomy without stapler over conventional hemorrhoidectomy in following aspects: restore anatomical integrity, technical easier, operative time, post operative pain and complications, hospital stay, return to work, cost effectiveness, better patient compliance and patient acceptance.

**Materials and methods:** 40 patients with second and third degree hemorrhoids were selected for surgery. 20 patients were operated by conventional open method, while 20 patients were operated by Longo's procedure. Detailed history and clinical examination was done. All patients were undergone

medical and anesthetic evaluation as per protocol. Outcome of procedures were notified to reach objectives of study.

**Results:** Manually done Longo's procedure was done by using the principle of Longo's procedure without stapler device was more time consuming, requires high technical skill, having more bleeding and reversible incontinence than open hemorrhoidectomy. While hospital stay, early return to work, better compliance and patient acceptance was better than open surgery. Longo's procedure with stapler methods was much easier than without stapler except higher cost.

**Conclusion:** We do not recommend Longo's procedure without stapler over open hemorrhoidectomy because of higher rate of complications and very high technical skill requirement.

### **Key words**

Open hemorrhoidectomy, Circumferential mucosectomy, Stapler hemorrhoidopexy, Longo's procedure, Manual hemorrhoidopexy.

### **Introduction**

Hemorrhoids are one of the commonest anal disorders that affect the mankind from the dawn of the history. They are engorged blood vessels (cushions of specialized sub mucosal tissue which assist the continence mechanism) covered by the lining of the anal canal that may slide down, prolapse, enlarge and bleed. It occurs especially with suspensor ligament dysfunction [1-4]. Stapled hemorrhoidopexy (SH) was first described by an Italian surgeon, Dr. Antonio Longo, Department of Surgery, University of Palermo, in late 1990's [5] and since then has been widely adopted worldwide. This operation involves the use of a stapled gun inserted through the anus to hold back the internal hemorrhoids and reduce the degree of prolapse by excising a circumferential strip of mucosa from the proximal anal canal. Stapled hemorrhoidopexy is usually reserved for 3<sup>rd</sup> and 4<sup>th</sup> degree hemorrhoids. It gives minimal pain after the operation and earlier return to work or normal activity, compared to open hemorrhoidectomy [6]. Patients with attacks of hemorrhoids causing severe discomfort are prepared to endure their symptoms rather than return to the doctor for fear that surgery will be advised, an operation with an evil reputation of severe pain. Invention of new transanal stapler device which is not involving sensitive anal mucosa below the dentate line to produce less postoperative pain. But cost of stapler is very high in low economic setup. Traditional open hemorrhoidectomy has an evil

reputation due to post operative severe pain [7]. So to reduce the severity of postoperative pain transanal hemorrhoidectomy (Longo's procedure) done by stapler device was evolved, which does not involve sensitive anal mucosa below the dentate line, but the disadvantage is its total operative cost. So it is not feasible in government hospital setup due to the high cost of stapler device. So, in this study, to minimize operative cost, we had operated patients of 2<sup>nd</sup> and 3<sup>rd</sup> degree hemorrhoids by Longo's procedure done manually without stapler using the principle of circumferential hemorrhoidectomy and manual hemorrhoidopexy and result were compared with open hemorrhoidectomy. We had selected 40 patients, out of which 20 operated with Longo's procedure without stapler and 20 with conventional open hemorrhoidectomy. Immediate and late post operative complications, follow up subjective and objective results, hospital stay and time of recovery were compared.

### **Material and methods**

**Patient selection:** The study design was done in Smt. NHLMMC, Ahmedabad between years 2003 to 2005 and in BJ Medical College, Ahmedabad between years 2006 to 2007. It was a prospective comparative study. All selected patients had second or third degree hemorrhoids. Detailed history of patients with chief complaints like bleeding per rectum, prolapse, constipation, discharge, pain was asked. Clinical examination,

digital per rectal examination, proctoscopy, and sigmoidoscopy when required was done. Patients were undergone required laboratory and radiological investigation for surgery. All patients were thoroughly examined by anesthetist and medical for pre-operative fitness for surgery. Patients were informed about type of surgery and possible complications. Informed consent of patients was taken.

**Intra-operative:** Type of surgery and anesthesia, per-operative complication, surgery time were noted down.

**Post-operative:** Each patient was evaluated for post-operative course in form of hemorrhage, pain, retention of urine, secondary hemorrhage, fecal incontinence and anal stricture.

**Follow up:** Assessment done inform of post operative pain, recurrence of symptoms, and subjective view of patient for procedure.

**Objective evaluation:** It was done by local examination to look for fistula, fissure, skin tags, and anal stenosis.

## Results

Incidence of male was 70% in my study and 55% patients were between 20-40 years. Most common symptom was bleeding per rectum and prolapse which affected more than 80% of cases. 75% of patients were presented from 1 month to 3 years since symptoms appeared (**Table – 1 to 4**) Additional anorectal findings were as per **Table – 5**.

**Table – 1:** Sex distribution.

Sex	No. of patients	Percentage
Male	28	70
Female	12	30

**Table – 2:** Age distribution.

Age (in years)	No. of patients	Percentage (%)
Up to 20	Nil	0
21-40	22	55
41-60	16	40
>60	2	20

**Table – 3:** Symptoms.

Symptoms	No. of patients	%
Bleeding per rectum	32	80
Prolapsed	36	90
Constipation	12	30
Painful defecation	14	35
Discharge	4	10

**Table – 4:** Duration of symptoms.

Duration of symptoms	No. of patients	%
Less than 1 month	6	15
>1 month to 1 year	30	75
>1 year to 3 year	4	10
More than 3 year	0	0

**Table – 5:** Additional anorectal finding.

Anorectal conditions	No. of patients	%
Fissure	2	5
Fistula	Nil	-
Perianal abscess	Nil	-

**Intra-operative:** Operative time for open hemorrhoids was between 15-45 minutes while for manual Longo's procedure, it was between 90-120 minutes. It was significantly higher in Longo's procedure. 2 patients encountered significant intra-operative blood loss in open surgery while it was 4 patients in manual Longo's procedure. 6 patients had 2<sup>nd</sup> degree hemorrhoids while 34 patients had third degree hemorrhoids (**Table – 6, 7**).

**Post-operative:** Post-operative stay with open surgery was 7-15 days while in manual Longo's procedure; it was 3-6 days. Post-operative pain was higher in open hemorrhoidectomy than manual Longo's procedure. Post-operative bleeding was 20% cases of open while it was 30% in manual Longo's procedure. Post-operative reversible anal incontinence was present in 2 cases of manual Longo's procedure but not in open hemorrhoidectomy (**Table – 8 to 13**).

**Table – 6:** Different operations done for different degree of hemorrhoids.

Degree of hemorrhoids	Open hemorrhoidectomy	%	Longo without stapler	%
2 <sup>nd</sup>	4	20	2	10
3 <sup>rd</sup> mucosal Prolapsed part				
Reducible	16	80	18	90
Non reducible	0	-	0	-
Total	20	100	20	100

**Follow up:** After one month, one patient had recurrence of bleeding per rectum, one had anal stricture and 2 patients had painful defecation in open hemorrhoidectomy while only one patient had anal stricture in manual Longo's procedure (Table – 14, 15).

**Table – 7:** Operative time.

Method	Operative time average
Open	15-45 Min (17)
Longo	1 ½ - 2 Hrs

**Table – 8:** Post operative hospital stay.

Operation	Average in days
Open	7-15
Longo (without stapler)	3-6

**Table – 9:** Post-operative pain.

It is divided in two types:

Immediate within 1<sup>st</sup> – 48 hours

Late between 3<sup>rd</sup> to 10<sup>th</sup> day

**Grades:**

Grade 0 – no pain

Grade 1 – mild discomfort

Grade 2 - mild to moderate pain which required oral analgesics

Grades 3 – severe pain which required parental analgesics

Grade	Open		Longo's procedure	
	No	%	No	%
0	-	-	-	-
I	4	20	14	70
II	8	40	6	30
III	8	40	-	-

**Table – 10:** Per-operative bleeding.

Operation	No. of patients	%
Open hemorrhoidectomy	2	10
Longo without stapler	4	20

**Table – 11:** Post-operative hemorrhage.

Operation	No. of patients	%
Open hemorrhoidectomy	2	10
Longo without stapler	3	15

**Table – 12:** Post-operative infection.

Operation	Perianal abscess		Fistula in ano	
	No	%	No	%
Open hemorrhoidectomy	1	5	0	-
Longo without stapler	1	5	0	-

**Table – 13:** Post-operative anal incontinence.

Operation	No of patients	%
Open haemorrhodectomy	0	-
Longo without stapler	2	10

**Patients view:** Results of both procedures had not much differences and no advantages of

Longo's procedure over open procedure noted except post-operative pain (**Table – 16**).

**Table – 14:** Recurrence of symptoms.

Symptoms	Open	Longo's procedure
Bleeding per rectum	2 (10%)	-
Prolapse	-	-
Anal stricture	1 (5%)	2 (10%)
Constipation	-	-
Painful defecation	4 (20%)	-
Discharge	-	-

**Table – 15:** Functional recovery.

Method	Average days
Open	15-90
Longo	5-35

**Table – 16:** Patient's view.

Result	Open		Longo's procedure	
	No	%	No	%
Excellent	2	20	2	20
Good	5	50	4	40
Fair	3	30	4	40

## Discussion

It has been a challenge for centuries to find the treatment that suits all patients with this benign anorectal problem. Reduction in postoperative pain, hospital stay and patient comfort has been approved by a number of randomized controlled trials in preference for Stapled over Open hemorrhoidectomy [8-12]. Keeping in mind the above results, to overcome the cost effect we have started the Longo's procedure without stapler device using the nearly same principle of Longo's procedure with Stapler device of circumferential mucosectomy and hemorrhoidopexy [12-18]. So we have no comparative data regarding this study. In our study, we found that manual Longo's procedure was very lengthy, required more operative time, surgery was technical difficult and bleeding was

more. As during surgery anal verge was dilated more so partial reversible incontinence was seen. As sensitive part of anal canal was minimally disturbed pain was less, and dressing were not required. Occasionally post-operative bleeding from anastomotic site was seen. Overall less hospital stay was required and early return to work was possible in few cases. Open conventional hemorrhoidectomy was technically easier, less time consuming, less bleeding, less incontinence but postoperative pain, bleeding and frequent dressing was required. Hospital stay was more and return to work was delayed.

## Conclusion

In my studies and also reviewing the literature about Longo's procedure by stapler method, it seems that Longo's procedure with Stapler Device is much easier than without stapler, the only drawback is total cost. So we recommend Open conventional hemorrhoidectomy against Longo's manual procedure without stapler device for 2<sup>nd</sup> and 3<sup>rd</sup> degree hemorrhoids.

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