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Retrospective Comparative Study between Stapled (Longo's) Haemorrhoidopexy v/s Suture Rectopexy (Chivate's) in Management of Haemorrhoids

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Abstract

Background: Haemmoroids refer to anal cushions and when it becomes pathological, it will produce symptoms of bleeding, mucus discharge, itching, pain and prolapse. The objective of the present study was to compare between the results of Longo's and Chivate's procedure in terms of operative time, post-operative pain and complications, return to normal work and recurrence.

Materials and Methods: In the present study 30 number of patients clinically diagnosed as second degree, third degree and fourth degree haemmrhoids are enrolled and operated. 15 number of cases were selected under Group A category and Stapled Haemorrhoidopexy was perfomed. Another 15 number of patients were put under Group B category and Suture Rectopexy was performed. The results of both these procedures were compared. Post-operative check-ups at 12 hours, 24 hours and upto 48 hours were done. Follow-up of all the cases were done at 2 weeks, 4 weeks, 8 weeks and upto a period of 6 months.

Statistical Analysis: Standard statistical analysis method like SPSS (software version 200) was adopted for the analysis. The data were evaluated by comparing two groups using Chi Square Test with a P value <0.05 as significant.

Results: In Stapled Haemorrhoidopexy, there was less post-operative pain as per visual analogue score, less of operating time, fewer days of hospital stay and early return to normal work. In Suture Rectopexy, there were also similar results. Hence, no significant differences in post-operative complications were found in both the procedures. There were four recurrences with stapled haemorrhoidopexy and two recurrences with sutured rectopexy in the present study.

Conclusion: At present many surgical procedures are practiced for haemorrhoids. However, we found that stapled haemorrhoidopexy of Longos's offers better results in terms of fewer post-operative complications, good patient compliance and better long term results.

Keywords: Haemorrhoids; Recurrence; Piles, Complications; Stapled (Longo's) Haemorrhoidopexy; Suture (Chivate's) Rectopexy.

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INTRODUCTION

The term Haemorrhoid in Greek denotes flow of blood and Piles in Latin means anal swelling (Pila/Ball). Haemorrhoids are anal cushions of vascular tissue and any pathological changes in it will result in symptoms such as bleeding, pruritis, mucus discharge, pain and prolapse. These anal cushions are also responsible for maintenance of anal continence by contraction and closure of internal sphincter.[1,2]

Hemorrhoids are present in 04-34 % of population, and maybe symptomatic or asymptomatic. It could be external, internal and interno-external variety. External Haemorrhoids are congregation of peri-anal vascular plexus covered by skin. Internal Haemorrhoids originate from subepithelial plexus of anal canal above the dentate line due to pathological changes in anal cushions. Predisposing factors includes increased Intra-abdominal pressure, straining during daefecation (chronic constipation), portal hypertension, connective tissue abnormalities and tissue metaplasia are also responsible for development of haemorrhoids.[3] They are classified as four grades or degrees as per their prolapse at anal verge. The severity of the disease need not always reflect with the degree of prolapse. The symptomatic haemorrhoids of first and second degree were treated with medical management comprising of diet modification, life style alterations, and avoidance of constipation by usage of stool softeners and laxatives regularly. Oral flavonoids and calcium dobsilate are also beneficial in these patients.[4] In patients with Grade I and Grade II Haemorrhoids not responding to conservative management one of the surgical procedures like band ligation, sclero-therapy, infrared laser coagulation, cryotherapy and radio frequency ablations are the options.

In the present study, two surgical procedures such as Stapled Haemorrhoidopexy (Longo's) and trans anal suture rectopexy (Chivate's) were chosen for second degree, third and fourth degree haemorrhoids.[5-7] Their results were compared in terms of post-operative pain and complications, duration of hospital stay, return to normal work, patients compliance and recurrence.

It is now well accepted that in first and second degree haemorrhoids, conservative management was recommended. However, third and fourth degree haemorrhoids required surgery.[8]

MATERIALS AND METHODS

The present study was a retrospective comparative study at Dr. Bruno Cheong Hospital, Mauritius from November 2021 to December 2022. 30 number of participants diagnosed as haemorrhoids were enrolled.

Ethical clearance from the hospital committee has been obtained before the study.

Selection Criteria

Inclusion Criteria

1. Grade II, Grade III and Grade IV Haemorrhoids associated with mucosal prolapse involving two or more numbers.
2. Circumferencial haemorrhoids.
3. Age between 18 years to 70 years.

Exclusion Criteria

1. Patients with gangrenous and thrombosed haemorrhoids.
2. Patients having co-morbid conditions and associated gastro-intestinal diseases.
3. Patients not willing to be part of the study and those who are not fit for surgery.

The participants were thoroughly assessed with clinical history and examination and proctoscopy. They were then divided into Group-A with 15 cases and Stapled Haemorrhoidopexy of Longo's was performed. Another 15 cases were in Group-B had trans-anal suture rectopexy of Chivate's.

In Longo's procedure, a special circular suturing machine was used to cut a cylinder out of excess rectal mucosa and at the same time a row of sutures were given above the dentate line to unite the tissues. It prevents the prolapse of the rectal mucosa. In the present study 33 mm diameter, two row staple line stampler was used.

In Chivate's procedure, rectal mucosa and submucosa are transfixed to the whole circumference in two rows at 2 cms and 4 cms distal to the dentate line. This prevents the prolapse of the anal cushions.

The results of these two procedures were compared with the following parameters:

1. Operating time (in minutes)
2. Intra-operative complications (bleeding, haematoma)
3. Post-operative complications (Pain/Urinary

retention/Mucosal prolapse)
4. Duration of hospital stay
5. Resumption to normal work

All thepatients were followed up to a period of six months to assess long term complications and recurrence.

Statistical Analysis:

Standard statistical analysis method like SPSS (software version 200) was adopted for the analysis. The data were evaluated by comparing two groups using Chi Square Test with a P value <0.05 as significant.

RESULTS

In the present comparative study there were 30 patients, who were divided into Group A and Group B, each comprising of 15 patients.

Table 1: Sex incidence and mean value

Sex	Stapled Haemorrhoidopexy		Transanal suture Haemorrhoidopexy	
	No. of Cases= 15	Percentage	No. of Cases= 15	Percentage
Females	4	26.70%	5	33.30%
Males	11	73.30%	10	66.70%
Chi Square	0.159	P value	0.69: Statistically non-significant	

There were 21 males and 9 females in the study group. 11 no. of males had undergone stapled haemorrhoidopexy and 10 had suture rectopexy. Amongst 9 females, 4 had stapled haemorrhoidopexy and 5 had suture rectopexy.

Table 2: Comparative Pre-operative symptoms and signs in both groups

Signs and Symptom	Stapled Haemorrhoidopexy		Suture Haemorrhoidopexy		Chi Square	P value
	No. of Cases	Percentage	No. of Cases	Percentage		
Bleeding	9	60%	10	66.70%	0.37	0.705 : Not Significant
Pain	9	60%	11	73.30%	0.6	0.439 : Not Significant
Mucus Discharge	15	100%	15	100%	-	-
Itching	10	66.70%	10	66.70%	0.00	1.00 : Not Significant
Prolapse	12	80%	9	60%	1.429	0.0232 : Significant
II Degree Haemorrhoids	7	46.70%	6	40%		
III Degree Haemorrhoids	4	26.70%	3	20%	0.62	0.732 : Not Significant
IV Degree Haemorrhoids	4	26.70%	6	40%		

The patients presented with more or less with the same signs and symptoms before surgery and it was found to be statistically non-significant.

Table 3: Distribution of cases according to the number of haemorrhoids

Number of Haemorrhoids	Stapled Haemorrhoidopexy		Suture Haemorrhoidopexy	
	No. of Cases Operated	Percentage	No. of Cases Operated	Percentage
2	5	33.30%	2	13.30%
3	3	20.00%	6	40.00%
>3	7	46.70%	7	46.70%
Chi Square	2.286	P value	0.3189: Not Significant	

No significant association was found in terms of haemorrhoids and surgeries performed. 7 cases with >3 number of haemorrhoids had undergone stapled procedure and 7 cases had sutured procedure in the present study.

Table 4: Comparative parameters and mean values in both groups

-	-	No. of Cases	Mean values	SD
Age (in years)	Stapler haemorrhoidopexy	15	50.53 years	9.342
	Suture haemorrhoidopexy	15	49.8	11.428
	Total	30	50.17	10.262
Duration of symptoms (in months)	Stapler haemorrhoidopexy	15	32.4 months	9.62
	Suture haemorrhoidopexy	15	35.73	10.292
	Total	30	34.07	9.934
Operative time (in minutes)	Stapler haemorrhoidopexy	15	34.4 minutes	2.473
	Suture haemorrhoidopexy	15	35.07	2.604
	Total	30	34.73	2.518
Duration of hospitalization (days)	Stapler haemorrhoidopexy	15	2.2 days	1.082
	Suture haemorrhoidopexy	15	1.87	0.834
	Total	30	2.03	0.964

In the present study, the mean age of the cases was 50.17 years and it was 50.53 years with stapled haemorrhoidopexy and 49.8 years with suture rectopexy. The maximum no. of cases were between 40 to 50 years of age group. The mean duration of symptoms was 34.07 months and maximum cases presented in 32-36 months. The mean operative time was 34.73 minutes and the mean duration of hospital stay was 2.03 days.

Table 5: Comparative Post-operative complications in both groups

Post-operative complications	Stapled Haemorrhoidopexy (Group A)		Suture Haemorrhoidopexy (Group B)	
	No. of Cases Operated	Percentage	No. of Cases Operated	Percentage
Bleeding	2	13.30%	1	6.70%
Prolapse	2	13.30%	1	6.70%
Pain & Urinary retention	3	20%	2	13.30%
Chi Square	1.34	P value	0.72: Not Significant	

No significant statistical association was found in terms of post-operative bleeding, prolapse, pain & urinary retension in both the procedures.

Table 6: Comparison of Patients compliance in both the procedures

Compliance of the patient following surgery	Stapled Haemorrhoidopexy		Suture Haemorrhoidopexy	
	No. of Cases = 15	Percentage	No. of Cases = 15	Percentage
Good	8	53.30%	4	26.70%
Very Good	4	26.70%	5	33.30%
Better	3	20.00%	6	40.00%
Chi Square	2.44	P value	0.295	

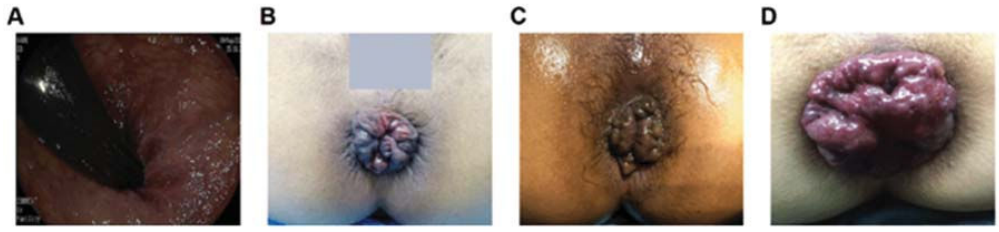
Patient compliance was better in 3 cases with Stapled procedure and 6 cases with Suture procedure. However, no statistical significance were found between the two procedures.

Table 7: Long term complications on follow up

Recurrence	Stapled Haemorrhoidopexy		Suture Haemorrhoidopexy		Chi Square	P value
	No. of cases=15	Percentage	No. of cases=15	Percentage		
Recurrence	4 cases	26.70%	2 cases	13.35%	0.833	0.0361: Significant
Recurrence of external pile mass in 4 weeks	2 cases	13.35%	1 cases	6.70%	0.37	0.543: Not Significant

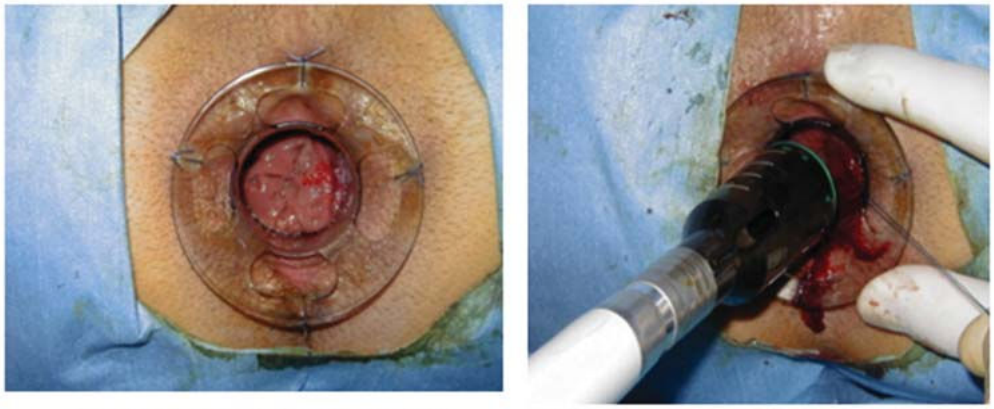
There were 4 recurrences with stapled procedure and 2 recurrences with suture procedure in the present study and it was statistically significant.

Colour Plate 1



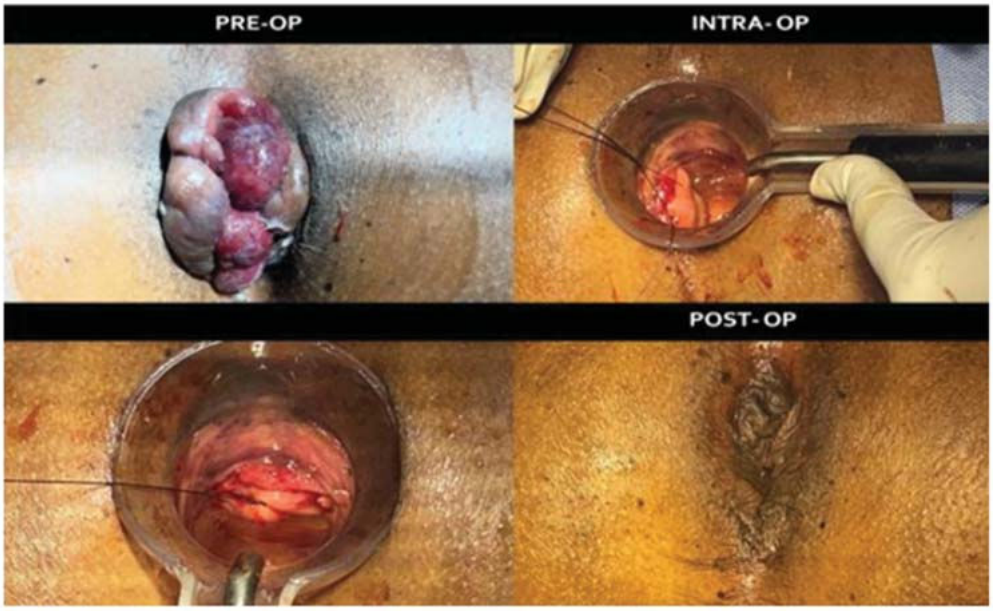
A-GRADE I Internal Hemorrhoidsinternal **B-GRADE-II Hemorrhoidsinternal** **C-GRADE-III Hemorrhoidsinternal** **D-GRADE-IV Hemorrhoids**

Colour Plate 2



LONGOS PROCEDURE PRE-OP **LONGOS PROCEDURE INTRA-OP**

Colour Plate 3



Chivate's Procedure

DISCUSSION

It was a retrospective study of 30 no. of participants comparing the efficacy and benefits between Longo's procedure and Chivate's Rectopexy in terms of post-operative complications, early return to work, hospital stay and patients compliance in haemorrhoidal diseases.

Dr Antonio Longo in 1998 at the Endoscopy meeting in Rome had described the usage and efficacy of circular stapling technique in Grade II, III and IV haemorrhoids with good post-operative results when compared to Open Surgery of Milligen & Morgan.[9]

Dr. Shanthi Kumar D. Chivates in 2012 presented the concept of Transanal Sutured Rectopexy (Haemorrhoidopexy) in Grade II, III and IV haemorrhoids with better post-operative results in comparison to Open Conventional Surgery (M & M).[10]

In the present study group, the mean duration of surgery was 34.73 minutes. It was 34.4 minutes in Group A of Longo's and 35.07 minutes in Group B of Chivate's. Daniel R *et al* reported similar observations with Stapler Haemorrhoidopexy in his study.[11] Dinesh Prasad *et al* reported 53 minutes in Group A and 37 minutes in Group B. Hence, Stapler Haemorrhoidopexy requires lesser time than Suture Rectopexy. There were 2 cases (13.30%) of post-operative bleeding in Group A and 1 case in Group B (6.70%) in the study group. Dr Mohan SV *et al* had made similar observations about post-operative bleeding with Stapler Haemorrhoidopexy in his study.[12] Prasad *et al* reported 16.64% of incidence of bleeding in Group A and 40% in Group B cases. There were 3 cases of post-operative pain and urinary retention (20%) in Group A and 2 cases (13.30%) in Group B and the results are not statistically significant. Gravies J F *et al* reported that Stapled Haemorrhoidopexy causes less post-operative pain in his cases.[13] Bhandari R S *et al* reported that Stapler Haemorrhoidopexy had better results in terms of less bleeding and post-operative pain.[14] There were 4 cases (26.70%) of recurrence with Longo's procedure and 2 cases (13.30%) with Chivate's procedure in the present study. Prasad et al reported an incidence of recurrence of 6.67% on long term follow up in Group A as compared to 40% in Group B in his study. Giordano P *et al* had reported a significantly higher incidence of recurrence and additional surgery with Stapled Haemorrhoidopexy.[15] The post-operative hospital stay in Stapled Haemorrhoidopexy was 2.2 days in the present study. Daniel R *et al* also reported shorter hospital stay with Stapled Haemorrhoidopexy. A systemic review by Tjandra *et al.* A meta-analysis by Nisar PJ *et al* and a study by RS Bhandari *et al* reported shorter post-operative stay with Stapled Haemorrhoidopexy.[16, 17]

On overall assessment it was concluded that Stapled Haemorrhoidopexy had lesser post-operative complications, less consumption of post-operative analgesia, early post-operative recovery, fewer days of hospital stay, early return to work and good patient compliance. It had also added the benefits of lesser operative time and intra-operative complication when compared to sutured haemorrhoidopexy in the present study group. Moreover, there was scarcity of literature on comparative studies between Longo's and Chivate's procedure. Large sample size and long term follow up and meta-analysis are required for better understanding of recurrences and other complications.

CONCLUSION

Stapled Haemorrhoidopexy was recommended in late Grade II, III and IV Haemorrhoids in the present study. Since, it yielded good results. However, proper selection of size of stapler and adequate training of medical personnel are mandatory for this procedure.

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We express our gratitude to the hospital authorities and participants in the protocol.

Conflict of Interest

The authors declare that they have no conflicts of interests.

Key Messages

Stapled Haemorrhoidopexy stands to be the procedure of choice in Late Grade II, III and IV Haemorrhoids in the present study.

REFERENCES

1. Martel G Boushy RP. The treatment of Haemorrhoids in Unusual Situations and Difficult Circumstances. Semin Colon Rectal Surg 18 (2007): 187-196.

2. Gibbons CP, Trowbridge EA, Bannister JJ, Read NW (1986) Role of anal cushions in continence. Lancet 1:886-888.
3. Gibbons CP, Bannister JJ, Read NW (1988) Role of constipation and anal hypertonia in the pathogenesis of haemorrhoids. Br J Surg 75:656-660.
4. Sneider EB, Maykel JA. Diagnosis and management of symptomatic hemorrhoids. SurgClin North Am 90 (2010):17-32.
5. Cintron JR, Abcarian H. Benign Anorectal: Hemorrhoids. In: Wolff BG, Fleshman JW, Beck DE, Pemberton JH, Wexner SD, Church JM, *et al.*, editors. The ASCRS Textbook of Colon and Rectal Surgery. New York, NY: Springer New York (2007):156-177.
6. Cataldo P, Ellis CN, Gregorcyk S, *et al.* Practice parameters for the management of hemorrhoids (revised). Dis Colon Rectum 48 (2005):189-194.
7. Turell R. Hemorrhoids: advances and retreats. Am J Surg 99 (1960):154-167.
8. Ahmed Q, Noorani S. Stapled haemorrhoidectomy/ anoplasty: a study at KVSS Site Hospital, Karachi. Pak J Surg 19 (2003):9-12.
9. Longo A (1998) Treatment of hemorrhoids disease by reduction of mucosa and haemorrhoidal prolapse with a circular suturing device: a new procedure; in Proceed. 6th World Congr Endoscop Surg, Rome, June 3-6.
10. Shantikumar D Chivate *et al*, Transanal Suture Rectopexy for Haemorrhoids: Chivate's Painless Cure for Piles, Indian J Surg. 2012 Oct; 74(5):412-417.
11. Daniel R, Jose MR, SF Paneerselvam P, *et al.* Open Haemorrhoidectomy Versus Stapled Haemorrhoidopexy-A Prospective Study In A Tertiary Hospital In South India (2017): 3939-3942.
12. Dr Mohan SVS DDKBR, Dr Sushil Kumar BV, Swathi. J open versus closed hemorrhoidectomy: surgical outcome. IOSR Journal of Dental and Medical Sciences 13 (2014):59-62.
13. Gravié JF, Lehur PA, Huten N, *et al.* Stapled hemorrhoidopexy versus milligan-morgan hemorrhoidectomy: A prospective, randomized, multicenter trial with 2 year postoperative follow up. Ann Surg 242 (2005): 29-35.
14. Bhandari RS, LakheyPj, Singh YP, *et al.* Stapled haemorrhoidectomy versus openhae morrhoidectomy: a prospective comparative study 2015 (2015): 5.
15. Giordano P, Gravante G, Sorge R, *et al.* Long-term outcomes of stapled hemorrhoidopexy vs conventional hemorrhoidectomy: a meta-analysis of randomized controlled trials. Arch Surg 144.
16. Nisar PJ, Acheson AG, Neal KR, *et al.* Stapled haemorroidopexy compared with conventional haemorroidectomy: systematic review of randomized, controlled trials. Dis Colon Rectum 47 (2004): 1837-1845.
17. Tjandra JJ, Chan MK. Systematic review on the procedure for prolapse and hemorrhoids (stapled haemorroidopexcy). Dis Colon Rectum 50 (2007): 878-92.21.