

Original research article

Barron's band ligation vs open haemorrhoidectomy in the treatment of hemorrhoids: Anal stenosis, retention of urine, duration of hospital stay post operatively

¹Dr. Gowtham M, ²Dr. Shivalinga S, ³Dr. Abhilash, ⁴Dr. Kiran Kumar Nayak S

¹Senior Resident, Department of General Surgery, CIMS, Chamarajanagar, Karnataka, India

²Associate Professor, Department of General Surgery, Adi Chunchanagiri Institute of Medical Sciences, Bellur, Mandya, Karnataka, India

³Assistant Professor, Department of General Surgery, Navodaya Medical College and Hospital, Raichur, Karnataka, India

⁴Assistant Professor, Department of General Surgery, CIMS, Chamarajanagar, Karnataka, India

Corresponding Author:Dr. Kiran Kumar Nayak S

Abstract

Barron's band ligation is a simple, safe, and effective method for treating symptomatic second- and third-degree hemorrhoids with negligible complications. Barron's band ligation is a treatment modality which can resolve hemorrhoidal disease with lower incidence of complications like severe pain, anal stenosis and intra operative bleeding. Data from all the patients was collected using Structured Proforma. Detailed clinical history was taken in all the patients with particular reference to bleeding per rectum, constipation, prolapse, painful defecation discharge per rectum, dietary habits, and family history of hemorrhoids. Detailed general physical exam was done in all. In Open Haemorrhoidectomy group, 4% had Stenosis and in Barron's band ligation group, 0% had Stenosis. There was no significant difference in Stenosis between two groups. Mean Duration of hospital stay in Open Haemorrhoidectomy group was 3.64 ± 1.319 days in Barron's band ligation group was 1.48 ± 0.510 days. There was significant difference in Duration of hospital stay between two groups.

Keywords: Hemorrhoids, anal stenosis, retention of urine

Introduction

Hemorrhoids - one of the most common surgical diseases of anorectal region involving engorgement of submucosal vascular plexus. Multiple treatment options exist with variable outcomes. Barron's band ligation of hemorrhoids is a non-operative treatment which can be performed as a Day care procedure ^[1]. Barron's band ligation is a simple, safe, and effective method for treating symptomatic second- and third-degree hemorrhoids with negligible complications. Barron's band ligation is a treatment modality which can resolve hemorrhoidal disease with lower incidence of complications like severe pain, anal stenosis and intra operative bleeding. However, studies comparing between Open Hemorrhoidectomy and Barron's band ligation is limited in Indian setups ^[3, 4].

Methodology

Source of Data: Department of General surgery

Study Population

50 Consecutive cases of 2nd and 3rd degree haemorrhoid presenting to the outpatient department of general surgery were included in the study.

Inclusion Criteria

- Patients diagnosed to have 2nd and 3rd degree haemorrhoid
- Patients with age group 18- 65 years.

Exclusion Criteria

- Secondary haemorrhoids.
- Complicated haemorrhoid such as thrombosed, infected, ulcerated, gangrenous and strangulated.

Duration of study: 2 years

Study Design: Comparative Prospective study.

Sampling technique: Convenient Sampling Method.

Sample size: 50 consecutive samples divided in to two groups [25 in each group].

Method of Data Collection

The subjects fulfilling the inclusion criteria were divided in to two groups Group I and Group II, 1st patient was recruited in Group I and 2nd patient was recruited in group II similarly every odd numbered patient was recruited into Group I and even numbered patient was recruited into Group II. Group I patients underwent Open Haemorrhoidectomy and Group II patients underwent Barron’s band ligation. Data from all the patients was collected using Structured Proforma. Detailed clinical history was taken in all the patients with particular reference to bleeding per rectum, constipation, prolapse, painful defecation discharge per rectum, dietary habits, and family history of hemorrhoids. Detailed general physical exam was done in all. Each patient was subjected to local examination (DRE), proctoscopy. Techniques are currently available for the surgical treatment of Hemorrhoids. Enthusiastic reports of success with injection sclerotherapy, rubber band ligation, photocoagulation and formal Haemorrhoidectomy have been made. However, the increasing number of techniques suggested for dealing with hemorrhoids attests to the lack of universal satisfaction with those currently available. Under these circumstances, other factors like associated morbidity, long-term complications, hospital bed stay requirement and cost effectiveness should be taken into consideration in choosing a form of therapy.

Results

Table 1: Age distribution comparison between two groups

		Group					
		Open Haemorrhoidectomy		Barron’s band ligation		Total	
		Count	%	Count	%	Count	%
Age	<30 years	6	24.0%	4	16.0%	10	20.0%
	31 to 40 years	7	28.0%	5	20.0%	12	24.0%
	41 to 50 years	11	44.0%	12	48.0%	23	46.0%
	51 to 60 years	1	4.0%	4	16.0%	5	10.0%
	>60 years	0	0.0%	0	0.0%	0	0.0%

$\chi^2 = 2.577$, DF =3, p = 0.462 [Chi-square test]

In Open Haemorrhoidectomy group, majority of subjects were in the age group 41 to 50 years (44%) and in Barron’s band ligation group, majority of subjects were in the age group 41 to 50 years (48%). There was no significant difference in age distribution between two groups.

Table 2: Urinary retention distribution comparison between two groups

		Group					
		Open Haemorrhoidectomy		Barron’s band ligation		Total	
		Count	%	Count	%	Count	%
Urinary retention	Absent	10	40.0%	17	68.0%	27	54.0%
	Present	15	60.0%	8	32.0%	23	46.0%

$\chi^2 = 4.573$, DF =1, p = 0.032* [Chi-square test]

In Open Haemorrhoidectomy group, 60% had Urinary retention and in Barron’s band ligation group, 32% had Urinary retention. There was significant difference in Urinary retention between two groups.

Table 3: Stenosis distribution comparison between two groups

		Group					
		Open Haemorrhoidectomy		Barron’s band ligation		Total	
		Count	%	Count	%	Count	%
Stenosis	Absent	24	96.0%	25	100.0%	49	98%
	Present	1	4.0%	0	0.0%	1	2%

$\chi^2 = 1.020$, DF =1, p = 0.312 [Chi-square test]

In Open Haemorrhoidectomy group, 4% had Stenosis and in Barron’s band ligation group, 0% had Stenosis. There was no significant difference in Stenosis between two groups.

Table 4: Duration of Hospital stay comparison between two groups

		Group		N	Mean	SD	P value
--	--	-------	--	---	------	----	---------

Duration of hospital stay	Open Haemorrhoidectomy	25	3.64	1.319	<0.001*
	Barron's band ligation	25	1.48	0.510	

Mean Duration of hospital stay in Open Haemorrhoidectomy group was 3.64±1.319 days in Barron's band ligation group was 1.48±0.510 days. There was significant difference in Duration of hospital stay between two groups.

Discussion

Gagloo *et al.*,^[5] observed that in Rubber Band Ligation group showed excellent improvement in 32 patients (64%), moderate improvement in 10 patients (20%), and no improvement in 8 patients (16%) compared with 70%, 20%, and 10%, respectively following haemorrhoidectomy.

Dilawaiz M *et al.*,^[6] Self-limiting mild to moderate hemorrhage was encountered during first post-operative week in 88% patients in group A and 60% in group B. Thakkar NB *et al.*,^[7] observed that Rubber Band Ligation group showed excellent improvement in 16 patients (64%), moderate improvement in 05 patients (20%), and no improvement in 04 patients (16%) compared with 70%, 20%, and 10%, respectively following haemorrhoidectomy.

Cheng *et al.*,^[8] report that haemorrhoidectomy is good in curing the disease, but higher possibility of post-op pain, complications and longer hospital study would not justify its use in the treatment of second haemorrhoid.

Lewis *et al.*,^[9] is of view that Rubber Band Ligation is cheaper alternative to haemorrhoidectomy and reduces the demand for beds and pressure on surgical waiting list.

In the present study Mean Duration of hospital stay in Open Haemorrhoidectomy group was 3.64±1.319 days in Barron's band ligation group was 1.48±0.510 days. There was significant difference in Duration of hospital stay between two group.

Potluri B *et al.*,^[10] observed In Open Hemorrhoidectomy group, 43.33% patients stayed < 2 days, 56.67% patients stayed > 2 days. In Rubber Band Ligation group, 100% patients stayed < 2 days. p value < 0.0001 which was statistically significant.

Dilawaiz M *et al.*,^[6] observed that Mean hospital stay was 24 hours in group A (open haemorrhoidectomy) and one hour in group B (Rubber band Ligation).

The hospital stay in our study with group B is shorter than group A. In fact, patients were sent home after rubber band ligation on the same day in majority of the patients. The findings are comparable to studies by Tan *et al.*,^[11] who reported a mean post procedure hospital stay of 4 hours to one day in rubber band ligation group and 2.1 to ±0.5 days in open haemorrhoidectomy group. After recovery patients resumed normal work ranges from 3 – 15 days with mean 9 days in open haemorrhoidectomy and few hours to one day in rubber band ligation in international study by Wroblewski DE *et al*^[12].

Conclusion

- Open Haemorrhoidectomy group had significantly higher Urinary retention compared to Barron's band ligation group.
- Open Haemorrhoidectomy group had one case of Stenosis, where as Barron's band ligation group had no stenosis.
- Mean duration of hospital stay was significantly high in Open Haemorrhoidectomy group compared to Barron's band ligation group.

References

1. Nunoo-Mensah J, Klimasauskiene V, Kaiser AM. Excisional Hemorrhoidectomy (Ferguson, Milligan-Morgan, Whitehead). In: Scott-Conner, C.E.H., Kaiser, A.M., Nguyen, N.T., Sarpel, U., Sugg, S.L. (eds) Chassin's Operative Strategy in General Surgery. Springer, Cham; c2022. https://doi.org/10.1007/978-3-030-81415-1_74
2. Lorenzo-Rivero S. Article Commentary: Hemorrhoids: Diagnosis and Current Management. The American Surgeon. 2009;75(8):635-642.
3. Shanmugam V, Thaha MA, Rabindranath KS, Campbell KL, Steele RJ, Loudon MA, *et al.* Rubber band ligation versus excisional haemorrhoidectomy for haemorrhoids. Cochrane Database Syst Rev. 2005 Jul 20;(3):CD005034.
4. Shanmugam V, Thaha MA, Rabindranath KS, Campbell KL, Steele RJ, Loudon MA, *et al.* Systematic review of randomized trials comparing rubber band ligation with excisional haemorrhoidectomy. Journal of British Surgery. 2005 Dec;92(12):1481-7.
5. Gagloo MA, Hijaz SW, Nasir SA, Reyaz A, Bakshi IH, Chowdary NA, *et al.* Comparative study of hemorrhoidectomy and rubber band ligation in treatment of second- and third-degree hemorrhoids in Kashmir. Indian Journal of Surgery. 2013 Oct;75(5):356-60.
6. Dilawaiz M, Rashid A, Bashir Ma. Haemorrhoidectomy vs Rubber Band: Comparison of Post-Operative Complications. The Professional Medical Journal. 2011 Dec 10;18(04):571-4.
7. Thakkar NB. Hemorrhoidectomy versus rubber band ligation in treatment of second and third degree

- hemorrhoids: A comparative study. *Int J Res med sci.* 2019;7;2394-8
8. Cheng FC, Shum DW, Ong GB. The treatment of second-degree haemorrhoids by injection, rubber band ligation, maximal anal dilatation and haemorrhoidectomy: A prospective clinical trial. *Aust NZ J Surg.* 1981;51(5):458-462.
 9. Lewis AAM, Rogers HS, Leighton M. Trial of maximal anal dilatation, cryotherapy, and elastic band ligation as alternative to haemorrhoidectomy in the treatment of large prolapsing haemorrhoids. *BJS.* 1982;70:54-56.
 10. Potluri B, Gandikota VP, Challapalli SR. A comparative study of open haemorrhoidectomy versus rubber band ligation in second degree haemorrhoids. *J Evid Based Med Healthc.* 2020;7(40):2233-2236.
 11. Tan KY, Zin T, Sim HL. Randomized clinical trial comparing Ligasure haemorrhoidectomy with open diathermy haemorrhoidectomy. *Tech Coloproctol.* 2008;12:93-7.
 12. Wroblewski DE. Rubber band ligation of haemorrhoids. *Rhode Island Med.* 1995;78:172-3.