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EFFICACY OF BARRON BAND LIGATION IN TREATMENT OF GRADE-2 HAEMORRHOIDS: SAGA OF A FORGOTTEN HERO

General Surgery

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ABSTRACT

Introduction: The efficacy of Rubber band ligation (RBL) for grade-2 haemorrhoids was evaluated in the current era when newer office-based procedures are threatening its existence.

Methods: Data of 95 patients who underwent RBL were collected over 2 years. Baron band ligator was used to ligate 2 haemorrhoids at a time. Analysis was done using SPSS Version 20.0. P-value <0.05 will be considered as significant.

Results: Bleeding (95%), discharge (30.3%) and pain & irritation (12.6% each) were the presenting symptoms. Post-procedure 39.5% had discomfort, 20.17% had pain and 13.45% had bleeding and majority of them did not require any analgesia and returned to work the next day. 90% of the patient assessed the treatment modality as excellent. There was significant difference between occurrence of bleeding, pain and irritation at presentation, at 2 weeks, 1 month and 6 months.

Conclusion: RBL for grade-2 haemorrhoids is a safe, simple and cost-effective modality even in the face of newer office-based procedures

KEYWORDS

Rubber band ligation, Barron band ligation, haemorrhoids, office-based procedures

Introduction

Symptomatic haemorrhoids affect over a million people[1], and "office-based procedures" are ample and possible in most patients for their treatment[2] . Rubber band ligation (RBL), injection sclerotherapy (IS), infrared coagulation, cryotherapy, radiofrequency ablation and laser therapy are the offered modalities for treatment in out-patient department.

Barron Band Ligation of haemorrhoids was introduced by Barron who modified the technique initially described by Blaisdell[3] . This procedure has better outcomes and shorter recovery period than open haemorrhoidectomy [4-6]. It is a "safe and effective" procedure for grade 1, 2 and 3 haemorrhoids with vital improvement in "quality of life"[7,8] .

The risk of complications and morbidity of open haemorrhoidectomy led to advancements in office-based procedures for haemorrhoids. Various modalities have mushroomed over the years, like stapled haemorrhoidopexy, harmonic scalpel excision, laser surgery and "doppler-guided-haemorrhoidal-artery-ligation". These methods are quite expensive and technologically more sophisticated than traditional methods like RBL and Milligan-Morgan open haemorrhoidectomy with no added advantage in outcome measures[9] .

In the bargain of overcoming the steep learning curve of the newer techniques, present day surgeons have forgotten the RBL. Patients also hesitate to choose RBL as treatment modality when made aware of the other costly and recent options although additional cost does not essentially equate to better outcomes when compared to older interventions like RBL and haemorrhoidectomy[10] . With this background, we designed a study to evaluate the efficacy of RBL in treatment of grade-2 haemorrhoids in the modern era.

Material and methods:

A prospective-observational study was done in a tertiary care teaching hospital for 02 years. The aim was to evaluate the efficacy of Baron band ligation in treatment of symptomatic grade-2 haemorrhoids in the recent times. The objectives were to study the various predisposing factors for haemorrhoids, and to study the post-procedure complications following RBL.

All adults with grade-2 symptomatic internal haemorrhoids attending to surgery OPD were included. Patients with grade-1, 3 & 4 haemorrhoids, thrombosed/gangrenous internal or external haemorrhoids, anal stenosis, perianal abscess, rectal prolapse, ASA grades II, III and IV and on anticoagulants were excluded. The patients were explained in detail about their disease and various modalities other than RBL available with pros and cons of each. Detailed examination was done for all willing patients and consent was obtained.

RBL was done in surgery OPD without any anaesthesia after positioning the patient in left lateral (SIMS) position. Baron band ligator was used to ligate 2 haemorrhoids at a time. Sitz bath and high fibre diet was advised to all patients. Patients were observed for pain, discomfort, bleeding, urinary retention, sepsis, need for analgesia and absence from work. Follow-up was done at 2 weeks, one month and six months and pain, bleeding, prolapse, irritation, mucous discharge anal stenosis or incontinence was noted. Self-assessment by the patient in the terms of treatment as excellent, moderately help or of little help was done at the end of follow-up. Analysis was done using SPSS Version 20.0. P-value <0.05 will be considered as significant.

Results:

95 patients of grade-2 haemorrhoids who met the inclusion and exclusion criteria and consented to undergo RBL were studied during a period of 02 years. General characteristics of the patient is shown in table 1.

Table 1 General characteristics of patient population

	Number of patients (%)	
Gender	Male	63 (66.3)
	Female	32 (33.7)
Age group	≤ 20	02 (2.1)
	21 - 40	21 (22.0)
	41 - 60	48 (50.5)
	> 61	24 (25.2)
Bowel habits	Constipation	48 (50.5)
	Normal	06 (6.3)
	Straining	41 (43.1)
Family history	Yes	30 (31.5)
	No	65 (68.4)
Diet	Vegetarian	10 (10.9)
	Mixed	85 (89.1)

The age of patient ranged from 16 to 82 years with average of 52.7 years and majority of them were males (66.3%). 1/3rd patients had family history of haemorrhoids. Half of patients had constipation whereas 44% had history of straining at stools while normal bowel habits was present in 5%. Almost 90 % of patients consumed mixed diet (low-fibre). The procedure related parameters are shown in table 2. Bleeding (95%), discharge (30.3%) and pain & irritation (12.6% each) were the presenting symptoms. Post-procedure 39.5% had discomfort, 20.17% had pain and 13.45% had bleeding while none developed any serious complication. Depending on the number of days that discomfort was experienced by the patient, cases were categorized as Mild - lasting for one to two days, moderate - for three to seven days and severe - lasting for more than 7 days.

Table 2 Procedure related parameters

	Number of patients (%)	
Presenting symptoms	Bleeding	90 (95)
	Pain	12 (12.6)
	Irritation	12 (12.6)
	Discharge	29 (30.3)
Immediate complications	Discomfort	37 (39.5)
	Pain	19 (20.17)
	Bleeding	13 (13.45)
	Urinary Retention	0
	Sepsis	0
Post-ligation discomfort	No	25 (26.9)
	Mild (1-2 days)	65 (68.9)
	Moderate (3-7days)	5 (4.2)
	Severe (>7days)	0
Analgesia requirement	None	60 (63.9)
	Up to 3 days	30 (31.1)
	> 3 days	5 (5.0)
Absence from work	None	81 (85.7)
	1-3 days	13 (13.4)
	>4 days	1 (0.8)
Patients self-assessment of treatment at the end of follow-up	Excellent	84 (88.2)
	Moderate help	8 (8.4)
	Little help	3 (3.4)

69% had mild discomfort and 4% had moderate discomfort post RBL and majority of them did not require any analgesia. Maximum number of patients (86%) returned to work the next day and only 1% were absent from work for more than 4 days. At the end of follow up approximately 90% of the patient assessed the treatment modality as excellent. The follow up details of RBL are shown in table 3.

Table Follow up details of RBL

	At presentation	2 weeks	1month	6 months	
Bleeding	Yes	90	14	12	10
	No	5	81	83	85
	p-value	**<0.001**	**<0.001**	**<0.001**	
Pain	Yes	12	6	3	2
	No	83	89	92	93
	p-value	0.115	**0.013**	**0.004**	
Irritation	Yes	12	0	0	0
	No	83	95	95	95
	p-value	**<0.001**	**<0.001**	**<0.001**	

The effect of RBL on improvement of symptoms was assessed using parameters as bleeding, pain, mucous discharge, irritation, anal stenosis and incontinence. There was significant difference between occurrence of bleeding, pain and irritation at presentation, at 2 weeks, 1 month and 6 months. None of the patient developed anal stenosis and incontinence.

Discussion

Hemorrhoidal disease is common and symptomatic haemorrhoids affect >1 million individuals[1] and in most of them office-based procedure is feasible. Before even a patient approaches a surgeon, he already undergoes a trial of various conservative methods. These patients frequently end up running the 'therapeutic gauntlet' trying one form of therapy after another. Procedures such as RBL, IS, infrared coagulation, cryotherapy, radiofrequency ablation and laser therapy are effectively performed for haemorrhoids with or without local anaesthesia yet none of them has turned out to be a gold standard. Although RBL and IS have been successful out-patient modality for grade 1 and 2 haemorrhoids[11-14] but ironically these simple procedures are slowly going out of surgical practice owing to the threat posed by the other sophisticated modalities which have flourished over years and has RBL and IS appear as an out-dated choice. The study evaluates the effectiveness of RBL for treatment of second degree haemorrhoids in the era of infrared coagulation, cryotherapy, radiofrequency ablation and laser therapy.

RBL has been a simple and successful technique for years since initial description of the instrument by Blaisdell in 1954 and later modified by Barron in 196[33,15] . Studies have shown its successful use in all age groups and either of the sexes [4-6,8]. In our study, maximum patients (50%) were in the range of 41-60 years of age and incidence was seen marginally more in males (66.3% in males vs 33.6% in females). Low fibre diet, prolonged straining at stools and constipation are few of the predisposing factors for haemorrhoids[16] . In our study, 85% of patients consumed a mixed diet (low in fibre), 94% patients had history of constipation or straining and almost 30% had a family history of haemorrhoids which supports the above theory.

Bleeding (95%), discharge (30.3%) and pain & irritation (12.6% each) were the presenting symptoms in our patients. The great variance in symptomatology of haemorrhoids adds to the dilemma in patient's mind while seeking for treatment[17] . The studies have shown advantage of local anaesthetic infiltration for RBL in lessening of post-procedural pain [18] . But careful application of rings in the pain-insensitive area above the dentate line can obviate this requirement[5,6,12] . In our study, RBL was performed in all 95 cases as an office procedure in a single setting.
69% had mild discomfort and 4% had moderate discomfort post RBL and majority of them did not require any analgesia. None of the patients had complications like urinary retention, vaso-vagal syncope or sepsis in our study although wide range of complications have been reported following this procedure [12] . Absence of patient from his work was a measure of the clinical efficacy and cost-effectiveness of RBL. 86% of patients returned to work the very next day and only 1% were absent from work for more than 4 days. Thus, a procedure as simple and effective as RBL can save hundreds of hospitalization days and thousands of sick-leave days per year.

On follow-up, there was significant difference between occurrence of bleeding, pain and irritation at presentation, at 2 weeks, 1 month and 6 months. None of the patient developed anal stenosis and incontinence. 89% of our patients on self-assessment were fully satisfied with the outcome of RBL. These similar outcome parameters following RBL has been demonstrated In various studies [3,5,6,8,9,12,17,19,20] .

Conclusion

RBL for grade-2 haemorrhoids is a safe, simple and effective modality which can be offered to all age-group of patients and all genders. The procedure needs to be revisited again as it remains a better modality than any other office-based procedure in terms of efficacy and cost-effectiveness. In developing countries, with numerous constraints in terms of man, material and man-power, RBL offers to save hundreds of hospitalisation days and thousands of sick-leave days per year.

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