Vol. 16, No. 3
ORIGINAL PAPER

GENERAL SURGERY

MEDICAL CHANNEL
JULY - SEPTEMBER 2010

A COMPARISON OF RUBBER BAND LIGATION AND INJECTION SCLEROTHERAPY IN THE MANAGEMENT OF HEMORRHOIDS.

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ABSTRACT:

OBJECTIVE: *To compare outcome of rubber band ligation and injection sclerotherapy for the management of hemorrhoids in terms of symptoms improvement, complications and early resumption of work in out setup.*
METHODOLOGY: *This prospective comparative study was conducted at Department of surgery, Liaquat University Hospital Jamshoro and a private medical hospital Hyderabad from January 2008 to December 2008. Eighty patients with 1st and 2nd degree hemorrhoids were included in the study after obtaining informed consent, patients were explained both procedures in detail and upon selection of procedure were assigned to Group A (Rubber Band Ligation) and Group B (Injection Sclerotherapy). A predesigned proforma was used to document the study variables. SPSS 17 was used for statistical analysis.*
RESULTS: *Thirty seven patients were treated with Rubber band ligation (Group A) and 43 patients were treated with injection Sclerotherapy (Group B). In both groups there were 80 patients out of them 61 were males and 19 were females. Age ranged from 17 to 68 years with Mean±SD age of 43.9±7 years. Forty six patients (57.5%) had first degree hemorrhoids and 54 (67.5%) had second degree hemorrhoids. Rubber band ligation relieved symptoms of 36 (94.59%) patients, improved 7(14%) and it failed in 2(5.40%) patients. Injection sclerotherapy relived symptoms of 34 (79.06%) patients, and it failed in 9 (20.93%) patients. Two (5.40%) patients had pain and bleeding after the application of RBL, and subsequently band has to be removed. There was no difficulty in urination complained by any of patient in group A. In group B, no patient complained of pain, however, bleeding was complained by 6 (13.95%) patients and difficulty in urination was complained by 3 (6.97%) patients.*
CONCLUSION: *Rubber band ligation is a secure, easy to perform and economical procedure that can be performed confidently for the patients of 1st and 2nd degree hemorrhoids.*

KEYWORDS: hemorrhoids, rubber band ligation, injection sclerotherapy

INTRODUCTION:
Hemorrhoids are dilated veins in the anal cushion. Hemorrhoids are commonly complained by people of more than 50 years of age and also found in 5% of general population.[1] Hemorrhoids are also reported in ancient literature and since then several traditional methods are practiced to cure this problem. In addition, established surgical methods like Milligan Morgan and Ferguson's are also practiced to cure this problem. However, there has been always a need was realized to cure this common problem as a minimal invasive day care procedure and such efforts are resulted in establishment of outpatient procedures like infrared photocoagulation, cryotherapy, sclerotherapy and rubber band ligation (RBL).[2] Doppler-guided hemorrhoidectomy[3] and stapled hemorrhoidectomy[4] are current and latest treatment modalities.
Recently, symptomatic hemorrhoids are being managed according to their degree. Sclerotherapy and rubber band ligation are appears to be two of the mainly accepted beneficial options.[5]In this series, outcome of rubber band ligation as a daycare procedure is assessed in patients of 1st and 2nd degree hemorrhoids. RBL has an edge over other procedures for 1st and 2nd degree hemorrhoids as this procedure can easily be performed in OPD or surgeon's clinic with lesser complications as compared with other procedures.[6] RBL is a kind miniature hemorrhoidectomy resulting in adherence of mucosa to the underlying muscle.
There is reduced hospital stay and early return to work in patients treated with RBL.[6]In

this series, the outcome of rubber band ligation and injection sclerotherapy has been compared in terms of symptoms improvement, complications and early resumption of work in out setup.

METHODOLOGY:

This prospective comparative study was conducted at Department of surgery, Liaquat University Hospital Jamshoro and a private medical hospital Hyderabad from January 2008 to December 2008. Eighty patients with 1st and 2nd degree hemorrhoids were included in the study after obtaining informed consent, patients were explained both procedures in detail and upon selection of procedure were assigned to Group A (Rubber Band Ligation) and Group B (Injection Sclerotherapy). RBL was applied using Barron's banding apparatus, hemorrhoidectomy tissue 1-2 cm above dentate line is grasped, pulled into the barrel of Barron's banding apparatus and a small rubber band is slipped over it. Gabriel's syringe was used for injection sclerotherapy. A predesigned proforma was used to document the study variables. Patients with previous history of previous intervention or 3rd degree hemorrhoids were excluded from the study. Statistical analysis was done through SPSS 17.

RESULTS:

In this series 37 Patients were treated with Rubber band ligation (Group A) and 43 patients were treated with injection Sclerotherapy (Group B).

In both groups there were 80 patients out of them 61 were males and 19 were females (Table I). Age ranged from 17 to 68 years with Mean±SD age of 43.9±7 years. Forty six patients (57.5%) had first degree hemorrhoids and 54 (67.5%) had second degree hemorrhoids. (Table II)

Bleeding was the commonest symptoms present in both Groups, 35 (94.59%) patients had bleeding in Group A, while it was present in 39 (90.69%) patients of Group B. Pruritis ani was present in 7 (18.91%) patients of Group A, while it was complained by 9 (20.93%) patients of Group B. Pain was complained by 4(10.81%) of Group and 3 (6.9%). There was no statistically difference in both groups. In group "A" rubber band ligation relieved symptoms of 36 (94.59%) patients, improved 7(14%) and it failed in 2(5.40%) patients. In group "B" injection sclerotherapy relived symptoms of 34 (79.06%) patients, and it failed in 9(20.93%) patients. In group A 11 (29.72%) patients had two sessions, while in group B 19 (44.18%) had two sessions (Table IV) In group A, 2 (5.40%) patients have pain and bleeding after the application of RBL, and subsequently band has to be removed. There was no difficulty in urination complained by any of patient in group A.

TABLE I
GENDER DISTRIBUTION

Gender	Number of patients	Percentage
Males	61	76.25%
Females	19	23.75%

TABLE II
DEGREE OF HEMORRHOIDS

Degree	Number of patients	Percentage
First	46	57.5%
Second	54	67.5%

TABLE III
FREQUENCY OF SYMPTOMS

SYMPTOMS	Group A Rubber Band Ligation N=37	Group B Injection Sclero therapy N=43	P-value*
Bleeding	35 (94.59%)	39 (90.69%)	
Pruritis ani	7 (18.91%)	9 (20.93%)	NS
Pain	4(10.81%)	3 (6.9%)	

*Chi-Square Test

TABLE IV
REPETITION OF PROCEDURE

Procedure	Group A Rubber Band Ligation N=37	Group B Injection Sclerotherapy N=43
Single	26 (70.27%)	24 (55.81%)
Twice	11 (29.72%)	19 (44.18%)

TABLE V
COMPLICATIONS

Complications	Group A Rubber Band Ligation N=37	Group B Injection Sclerotherapy N=43	p-value*
Pain	2 (5.40%)	-	
Bleeding	2 (5.40%)	6 (13.95%)	0.03
Difficulty in urination	-	3 (6.97%)	

*Chi-Square Test

In group B, no patient complained of pain, however, bleeding was complained by 6 (13.95%) patients and difficulty in urination was complained by 3 (6.97%) patients (Table V).

DISCUSSION:

Patients with hemorrhoids are very frequently presented to our hospital. However still a large number of patients are reluctant to visit hospital due to social taboo and stigma attached with this disease, in addition with fear of pain and hospitalization problems, especially females. Since introduction of outpatient procedures, this problem is began to resolve, and among these RBL and injection sclerotherapy are commonly practiced in our setup, because there is no need of hospitalization in both procedures and both are economical and easy to perform. Some authors are of opinion that effectiveness of RBL is 1st degree hemorrhoids is questionable[4], however in this series no such problem encountered.In this series, there were very few complications seen. Eleven (29.72%) patients had double sessions of RBL and 26 (70.27%) patients had only one session of RBL. El Nakeeb AM et al[6] suggest that banding should be carried out in a single sitting, where as some authors are of opinion that the procedure should be done twice in order to decrease the post procedure complication like pain and edema.[7] Wherever band is applied over or near to dentate line, it causes pain which does not respond to pain killers, so band must be removed in order to relief the symptoms. However mild to moderate pain can be controlled by injection of local anesthetic in each mass. Slippage of band, secondary hemorrhoids, perianal abscess and fistula formation are frequently reported complications.[8] There were no such complications seen in our series. It is also reported that RBL is very effective in pregnant women and in patients who are unfit for surgery.[9] Some authors have also mentioned that RBL is their procedure of choice in patients with bleeding disorders or portal hypertension.[7]

Mounsey AL et al[10] has stated a recurrence rate of 13.13 % in his study, while Hajdarevic B et al[11] has documented a recurrence rate of 27%.

In long term follow-up, Savioz et al[12] has reported a recurrence rate of 23% in 5 years. It is observed that recurrence occur in those patients who doesn't alter their dietary habits. Mattana et al[13] has reported a recurrence rate of 85% in constipated patients while it was just 9% in patients with normal bowel habits.

A number of studies are present in literature discussing the efficacy of RBL, sclerotherapy,hemorrhoidectomy, cryotherapy and infrared coagulation.[2,9,11] A recent trail has shown that RBL is as effective as hemorrhoidectomy. Many authors have reported better outcome with RBL than sclerotherapy and infrared coagulation. [9,11]

CONCLUSION:

Rubber band ligation is safe, cost effective and economical procedure that can be performed confidently for the patients of 1st and 2nd degree hemorrhoids.

REFERENCES

1. Forlini A, Manzelli A, Quaresima S, Forlini M. Long-term result after rubber band ligation for haemorrhoids. Int J Colo-rectal Dis. 2009 Sep;24(9):1007- 10.
2. Tajana A, Chiurazzi D, De Lorenzi I. [Infrared photocoagulation, cryosurgery and laser surgery in hemorrhoidal disease].Ann Ital Chir. 1995 Nov-Dec;66(6):775-82
3. Conaghan P, Farouk R. Doppler-guided hemorrhoid artery ligation reduces the need for conventional hemorrhoid surgery in patients who fail rubber band ligation treatment. Dis Colon Rectum. 2009 Jan;52(1):127-30.
4. Cariati A. Hospital costs of conventional and stapled 1-day hemorrhoidectomy. Arch Surg. 2009 Oct;144(10):979-80;
5. MacRae HM, McLeod RS. Comparison of hemorrhoidal treatments: a meta-analysis. Can J Surg.1997 Feb;40(1)14-7.
6. El Nakeeb AM, Fikry AA, Omar WH, Fouda EM, El Metwally TA, Ghazy HE et al. Rubber band ligation for 750 cases of symptomatic hemorrhoids out of 2200 cases. World J Gastroenterol. 2008 Nov 14;14(42):6525-30.
7. Bronstein M, Issa N, Gutman M, Neufeld D. Ligation under vision of haemorrhoidal cushions for therapy of bleedinghaemorrhoids. Tech Coloproctol. 2008 Jun;12(2):119-22.
8. Sim HL, Tan KY, Poon PL, Cheng A, Mak K. Life-threatening perineal sepsis after rubber band ligation of haemorrhoids. Tech Coloproctol. 2009 Jun;13(2):161-4.
9. Abramowitz L. Management of hemorrhoid disease in the pregnant woman. Gastroenterol Clin Biol. 2008 May;32(5 Pt 2):S210-4.
10. Mounsey AL, Henry SL. Clinical inquiries.Which treatments work best for hemorrhoids? J Fam Pract. 2009 Sep; 58(9):492-3.
11. Hajdarevic B, Slaku J, Pandza H, Salihefendic N, Hadziahmetovic Z. Application of simple digital methods in the treatment of hemorrhoid disease. Stud Health Technol Inform. 2009;150:433-7.
12. Savioz D, Roche B, Glauser T, Dobrinov A, Ludwig C, Marti MC. Rubber band ligation of hemorrhoids: relapse as a function of time. Int J Colorectal Dis 1998; 13: 154-156.
13. Mattana C, Maria C, Pescatori M. Rubber band ligation of hemorrhoids and rectal mucosal prolapse in constipated patients. Dis Colon Rectum 1989; 32: 372-375.