

Original article

Haemorrhoids and Rubber Band Ligation

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Abstract

Objective: To assess efficiency of Rubber Band Ligation as a first choice in the treatment of haemorrhoids.

Methods: This study carried out in Queen Alia Hospital and Al-Husain Hospital (RMS) over the last two years were (106) patient's referred from the surgical outpatients for the treatment of haemorrhoids, (86) proved to have haemorrhoids (78) f them were considered suitable for Rubber Band Ligation in which only first, second and third degree haemorrhids were treated by Rubber Band Ligation.

Results: The results were assessed three months after completing treatment (86.3%) of the patients had excellent and good result, (4.5%) had poor results and were referred to surgery. Complications were generally minor (pain, bleeding, band slipping and band related abscess) and were manage satisfactorily

Conclusion: Rubber band ligation is simple, safe, relatively painless and cheap outpatient procedure suitable for first, second and even third degree haemorrhoids, and we recommended it as a first choice in the treatment of haemorrhids..

Keywords: Piles , Rubber band ligation , Complications , Efficacy.

Introduction

Hemorrhoids are an ancient affliction mentioned in the historical writings of every culture, including the Babylonian, Hindu, Greek, Egyptian and Hebrew.(1)(2).

The pathogenesis of haemoorrhoids is multifactorial. Pre-disposing factors include heredity, erect posture, gravity (decreased drainage from valveless veins), straining, pregnancy, deficiency of anal sphincter (surgery), colonic and rectal cancer and portal hypertension.(3). Most patients have more than one predisposing factor. Blaisdell first introduced the idea of ligation of haemorrhoids in 1954 and Barron had modified this technique in 1963.(4)(5) The severity of the symptoms of haemorrhoids has no constant relation to the degree of haemorrhoids presenting on examination. In addition to that it is estimated that out of every two persons over the age of 40 years one has some degree of haemorrhoids in North America and about 1-25 to 1-30 persons in the Third World are affected by haemorrhoids, the majority of cases are asymptomatic. Also many patients with severe symptoms are found to have a

minor degree of haemorrhoids.(6)(7) So the assessment of the results of treatment is based on the subjective improvements of the patients symptoms. The appearance of the anal canal is of secondary importance.

Method

One hundred and six patients were referred from the surgical outpatient of King Hussein Medical Centre between January 2013 and February 2014 to the endoscopic room at Al-Hussein Hospital for the treatment of haemorrhoids. Eighty six patients were proved to have haemorrhoids and of these 78 were considered suitable for Rubber Band Ligation (RBL) in which only first, second and third degree haemorrhoids were treated by RBL. Haemorrhoids were classified according to the modified classification of Golligher Careful history was taken from the patients and an initial assessment of the symptoms was obtained using a standard questionnaire. General physical examination, proctoscopy were carried out. No pre-medication, colonic preparation or anaesthesia was used. With

the patient either in the knee-elbow or left lateral position, a well lubricated proctoscope was introduced to the lower rectum and withdrawn into the anal canal to expose haemorrhoids grasping a conservative amount of tissue at least one cm above the dentate line by a grasping forceps and drawn to the drum of the ligature, if pain was experienced at this point the tissue was released and a slightly higher point was selected. If no pain was elicited, the instrument was fired. The resultant polyp was no larger than 1-2ml.

Table 1 Classification of haemorrhoids

Grade	Degree	Criteria
I	1 st degree	Bulging of haemorrhoids tissue on straining but no descent
II	2 nd degree	Prolapse on defecation or straining but spontaneous return to anal canal
III	3 rd degree	Prolapse which required manual replacement.
IV	4 th degree	Irreducible

This procedure was repeated once or twice with care to ligate the three haemorrhoids at different levels and the largest one is to be treated first. The band will strangle the haemorrhoids, remove redundant rectal mucosa and causes sub mucosal scarring. The haemorrhoids usually slough in 7 to 10 days. No antibiotics were routinely used and no analgesics stronger than paracetamol were needed for pain relief. It was explained to the patients that a second application of rubber bands to any residual haemorrhoids might be necessary. All patients were seen after three weeks for follow up and further ligation if required. Then after three months if had completed their treatment, another questionnaire of symptoms and a proctoscope examination was conducted to observe improvements made by the treatment and reduction in pile mass.

Statistical Analysis

The results were reported either as percentages for a categorical variable or mean standard deviation for a continuous variable. Percentage reduction was calculated for the improvement in symptoms.

Results

One hundred and six patients referred, 86 of the patients were proved to have haemorrhage as their sole problem, 78 patients were selected for R.B.L. in whom first, second and third degree haemorrhoids were diagnosed. Twenty eight patients were excluded for having other pathologies associated with haemorrhoids or having a fourth

degree or asymptomatic haemorrhoids, males (75.6%) outnumbered females (24.3%)

Table 2 Classification of patients selected for RBL according to haemorrhoids degree and sex. N=78.

Haemorrhoids	Patients	%	Sex		%	
			M	F	M	F
1 st degree	14	19.2	1	4	14.	5.1
2 nd degree	34	43.6	2	6	35.	7.6
3 rd degree	29	37.2	2	9	25.	11.
Total	78	100	5	1	75.	24.

Table 3. Patients distribution according to the age group. N=78

Age group	No. of Patients	%
10-20	4	5.1
21-30	16	20.5
31-40	20	25.7
41-50	18	23.1
51-60	11	14.1
>60	9	11.5
Total 4	78	100

The majority of patients were between the age of 20-50 (69.3%) their mean age was 40-45 \pm 17 the oldest was 78 years and the youngest was 16 years. Their main complaints were bleeding (88%) and prolapse (70.8%) came next.

Table 4. pre-ligation distribution of symptoms

Symptoms	No. of patients	%
Bleeding	69	88.4
Prolapse	55	70.5
Irritation	35	44.8
Pain (discomfort)	22	28.2
Constipation	18	23
Underwear soiling	11	14.1

Twenty three percent of patients had coexistent medical illness. Cardiac and pulmonary being the most common (6.4%). The majority required multiple ligations. There were 169 haemorrhoids ligated in total. Thirty five patients required two sessions while 4 patients required 3 sessions.

Table 5 . Coexistent medical illness.

Disease	No. of patients	%
Cardiac	5	6.4
DM	3	3.8
Hypertension	4	5.1
Pulmonary	5	6.4
Mental retardation	1	1.2
Total	18	23

Table 6. No. of ligations at presentation

Degree of haemorrhoids	No. of ligations at presentation				Patients required additional sessions		
	Single	T wo	Th ree	To tal	T wo	Th ree	To tal
1 st	4	6	5	15			
2 nd	6	14	14	34	12	1	13
3 rd	7	9	13	29	23	3	26
Total	17	29	32	78	35	4	39

Final Evaluation

The final evaluation was considered according to patient's response to the "follow-up questionnaire" 3 months after completing their treatment. Sixty six patients out of 78 attended this final check-up. Of the 12 patients who did not attend this final check-up, 8 became asymptomatic from the first ligation and 4 received further ligation and did not return presumably because they became asymptomatic also.

Discomfort caused by the treatment (Table 7): discomfort when present was felt immediately after ligation in the anal canal. It usually Reached a peak after two hours and often described as (a feeling of a bruise) which was sometimes followed by a feeling of fullness and an urge to defecate. When this persisted for 24-48 hours it was considered mild, when lasted more than 2 days it was considered moderate and severe form was considered for intolerable pain at any time. Most patients had either no discomfort or it was mild (72.6%).

Table 7. Discomfort caused by the treatment

Degree of discomfort or pain	No. of patients	%
No discomfort	10	15.2
Mild (discomfort ≤ 2 days)	38	57.6
Moderate (discomfort / 3 days)	16	24.2
Severe (intolerable pain at any time)	2	3.0

Time lost from work of household duties as a result of treatment (8I), all patients were treated on Thursdays after 11:00 a.m. and expected to return to work on Sundays. Table 8 shows that 65.2% did not lose anytime and 6.0% had lost more than three days. The loss does not include the half day needed to attend for treatment.

Results of treatment and symptoms relief: at review 40 patients (60.6%) considered themselves cured. The residual symptoms were compared with the presenting symptoms after three weeks and three months after completing the treatment (Table 9) which shows significant reduction in symptoms.

Table 8. Time lost review of patients

Time lost	No. of patients	%
No time lost	43	65.2
≤ 3 days	19	28.8
> 3 days	4	6.0
Total	66	100

Patient's opinion about the treatment results (Table 10) 86.3% of the patients reported excellent and good results. Sixty one patient said that they were willing to have the treatment again if symptoms recur.

Table 9. Symptomatic review of patients.

Symptoms	Initial N=78 3 weeks n=78					3 months n=66 (after completing treatment)		
	N o.	%	N o.	%	Reduction %	N o.	%	Reduction %
Bleeding	69	88.4	15	19.5	78.3	61	91.1	91.3
Prolapse	55	70.5	21	26.9	61.8	10	15.1	81.8
Irritation	35	44.8	15	19.2	57.1	55	83.3	85.7
Pain	22	28.2	8	10.2	63.6	35	53.0	86.4
Constipation	18	23.0	7	8.9	61.1	27	40.9	88.9
Underwear soiling	11	14.1	3	3.8	72.7	15	22.7	90.9
Lost followup	12							

Complications of treatment (Table 11): of the 66 patients included in the final evaluation, 8 patients (12%) had complications, 2 patients had severe pain, one of them had returned within 36 hours. On examination, the patient had the band ligated too low and it was removed and re-ligated at a higher point. The other had been too anxious and returned to the hospital on the 5th day after ligation and on examination by proctoscopy he had no localized area of tenderness so he was reassured and was given stronger analgesics.

Table 10. Patient's opinion about the treatment results, n=66.

Treatment results	No. of patients	%
Excellent (asymptomatic)	40	60.6
Good (minimal)	17	25.8
Fair (slight improvement)	6	9.1
Poor (no improvement or symptoms became worse)	3	4.5
Total	66	100

Table 11. Complications of RBL.

Complications	No. of patients	%
Pain (discomfort) (severe)	2	3
Bleeding	2	3
Anal fissure	1	1.5
Band slippage	2	3
Band related abscess	1	1.5
Total	8	12

Table XI. Complications of RBL.

Two patients had bleeding, one of them presented on the 8th post ligation day and on examination it was minor from the cut surface of the rubber band and he was reassured. The other one returned on the 6th post ligation day and on examination he had bleeding from residual tissue of a big internal haemorrhoid which was re-ligated.

Two patients had returned because they noticed the band had slipped, both had small amounts of haemorrhoid tissue ligated, both had re-ligation. One patient had acute anal fissure at the site of R.B.L., and was treated conservatively. One patient had band related abscess and was treated successfully by drainage.

Discussion

The treatment of all haemorrhoids by the surgery is impractical. So it was necessary to introduce a simpler method which is efficient, cheap, with low incidence of complications (8) Several methods were introduced among these was R.B.L.

In our series the patients were selected for R.B.L., first, second, and addition to third degree haemorrhoid were subjected to R.B.L., 4th degree haemorrhoids were excluded because we thought that a large irreducible haemorrhoid will not get much benefit from R.B.L., also patients requiring additional surgical ano-rectal procedure were

excluded. In our series most patients were males because of the fact that most females prefer a female doctor and they would be subjected to surgery rather than to be seen by a male doctor (Table 1).

Most patients had an age between 20-50 years (69.3%), *mean 40.45 ± 17) that is to say, the majority were in the working age group.

We had 23% with coexistent medical illness, so R.B.L. had avoided general anesthesia in those patients with poor anaesthetic risks.

Following the teaching of Barron, most workers have performed R.B.L. on one haemorrhoid at each visit. While others have applied bands at two sites.(9) In our series we have ligated all three haemorrhoids if present at one session which we believe have the following advantages:

- Treatment is sometimes completed at first visit.

- Pain when occurs is well tolerated by the patient and he will not anticipate pain again.

- More time is saved by the doctor, ancillary personnel and the patients.

The procedure was not completely painless as some authors claim it was associated with some degree of discomfort for most patients but it was tolerable for the majority of patients and did not made them lose much time of work.(9)(10) In those who did lose more than three days had either multiple ligation sessions because their haemorrhoids were too large or had complications. This is consistent with studies recommending multiple R.B.L.

Symptomatic improvement was achieved in 86.3% of patients who reported excellent and good results with a reduction of symptoms of 60-70% after three weeks and 80-90% after three months.(11)(12) In three patients who had poor results one had chronic constipation with a high anal tone and did not respond to laxatives and high roughage diet, the other one had chronic bronchitis and the third had benign prostatic hypertrophy and they were referred to surgery. These are similar with a study made by Leu et.al, who reported 90% symptomatic relief and 3% failure rate in which all three haemorrhoids were ligated.(12)(13)(14) Other studies showed similar rates of symptomatic improvements, event with long follow-up periods. Our complications were generally minor, and confirmed the safety and low morbidity of this procedure.

conclusion

Our work shows that R.B.L. is simple, safe, relatively painless and cheap outpatient procedure suitable for first, second and even third degree haemorrhoids, which is easier to ligate. It is well accepted by the patients and yields good results. Female doctors are advised to learn this simple

procedure and gain experience in it since female patients prefer a female doctor. It had eased pressure on our unit bed demand and decreased significantly the number of haemorrhoidectomies performed in our unit since many residents have done this technique and had gained experience in it, which contributed to patient's acceptance to this procedure and their willingness to have again when symptoms recur.

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