OUTCOME OF RUBBER BAND LIGATION OF HAEMORRHOIDS USING SUCTION LIGATOR

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Background: Haemorrhoids are a common surgical problem seen in the outpatient department. Rubber band ligation using suction is an effective treatment for symptomatic haemorrhoids but associated with significant morbidity.This prospective observational study was carried out to assess the efficacy, effectiveness and complications of rubber band ligation performed in outpatient for symptomatic haemorhoids using suction ligator. The results and outcome of procedure performed by the consultants and senior residents were also compared. **Methods**: 56 consecutive patients with symptomatic haemorrhoids underwent rubber band ligation in the outpatient clinic of the department of general surgery, Pakistan Institute of Medical Sciences. Outcome measures were symptomatic cure i.e. stoppage of bleeding and reduced mucosal prolapse. Complications were categorized as immediate, early (within one week) and late (within 3 months). **Results:** Symptomatic cure was achieved in 50(89.20%) patients (stoppage of bleeding and reduced mucosal prolapse). Six (10.72%) patients required further banding. Pain (mild to severe) was most common immediate and intermediate complication (14 and 20 patient's respectively). **Conclusion**: Rubber band ligation is an effective, outdoor procedure for symptomatic haemorrhoids, but associated with certain degree of morbidity.

Keywords: Hemorrhoids, Suction Ligator, Banding.

INTRODUCTION

Hemorrhoids are among the commonest surgical ailments of anorectal region seen in the outpatient department[1]. These are usually associated with distressing symptoms. The incidence of hemorrhoids increases with age. At least 50% of patients over the age of 50 years have some degree of discomfort from them. Shyness and fear are the main reasons of avoiding medical treatment[2]. Treatment of hemorrhoids has remained controversial among surgeons all over the world. For the last many decades' surgeons have treatment, which would give good results with minimum complications[3].

Most patients in initial stages are treated with conservative or minimally invasive approaches. Injection sclerotherapy and rubber band ligation(RBL) are two common non-surgical interventional procedures to treat first (1st) and second (2nd) degree haemorrhoids. These procedures can be performed in the outpatient clinics, with minimum resources and are cost effective. Rubber band ligation has been shown to be superior to the injection sclerotherapy; however it is also associated with certain complications. Introduction of suction ligator has almost completely replaced the conventional Barron's apparatus. In this article we will present the outcome of rubber band ligation using suction ligator in patient who presented or were referred for the treatment of haemorrhoids in the out patient surgical department of Pakistan Institute of Medical Sciences, Islamabad.

MATERIAL AND METHODS

This study was conducted at the department of General Surgery, Pakistan Institute of Medical Sciences, Islamabad. From February 2002 to December 2002. Fifty-six consecutive patients with different degree of haemorrhoids were included as shown in Table 1.

After complete history and examination (both digital rectal examination and proctoscopy) diagnosis and degree of haemorrhoids was confirmed. Rigid sigmoidoscopy was performed in selected cases. The indications for sigmoidoscopy were other symptoms like change in bowel habit, diarrhea and haematochezia and to rule out any malignant pathology in the distal colon. All patients were explained about the procedure and its complications and other treatment options available. An informed consent was obtained. Suction band ligation was done in OPD, and it was done both by consultants and senior surgical resident.

Patient was placed in left lateral position. Routine rectal examination and proctoscopy was performed to ascertain the degree of haemorrhoids. The base of hemorrhoids was clearly identified and bands were applied above the dentate line using suction band ligator (Kilroid® Meditech) (Figure-1). Two hemorrhoids were banded at single sitting. Repeat banding was done after 4 weeks when needed.

The patients were asked to report any pain on applying suction. If they had any pain, suction was released and a higher spot was chosen and bands were applied only when patient had no complaints of pain. Following the procedure, patients were asked to rate the discomfort / pain on a scale of 1-10. The pain was graded as mild (1-3), moderate (4-6) and severe (7-10). The patients were observed for immediate complications for 30 minutes and were followed up for intermediate complications (within 1 weeks) and late (within 2 months) in the OPD.

Data was analyzed by using SPSS version 10 and p-value was calculated using *chi* square test.

RESULTS

In our study there were 56 patients out of which 48 (85.6%) were male and 8 (14.3%) were female. All the patients had the symptoms of bleeding per rectum while 29 (51.7%) patients had complaints of prolapse and 23 (41%) had complaints of itching / pruritus ani and 16 (28.2%) had complaints of discharge per rectally. Total 127 bands were applied (two per single sitting) and repeat banding was done in 6 (10.7%) cases. Out of 56 patients 33 (58.9%) cases were done by the consultants while the senior residents did 23 cases. The comparative outcome and complications are given in the tables 2 and 3.

Twenty-four (42.8%) patients had immediate complications (Table 2) while 27 (48.21%) patients experienced intermediate complications (Table 3). There were no late and serious complications like sepsis, massive bleeding necrosis, ulceration and stenosis. There was no mortality. After two months follow up 50 (89.3%) patients had symptomatic cure and six patients had complaints of bleeding. On proctoscopy there were complete recovery in 41 (73.21%) cases, 9 (16.07%) had residual bulge, 3 (5.3%) had complete one pile left and (5.3%) had two complete piles left. (Table 4).

Table-1: Degree of Hemorrhoids

Degree	Number of Cases	Percentage
1st (1°)	11	19.64 %
2nd (11o)	41	73.22 %
3rd (111o)	04	07.14 %

Table-2: Immediate Complications of Suction Band Ligation

Problem	Consultant	Resident	Total	P-Value
Mild Pain	3(5.3%)	4(7.2%)	7 (12.5%)*	
Moderate Pain	3(5.3%)	1(1.78 %)	4(7.2%)	P<0.05
Severe Pain	2(3.5%)	3(5.3%)	5(8.9%)*	

Vasovagal episode	1(1.7%)	3(5.3%)	4(7.2%)	P<0.05
Bleeding	2(3.5%)	2(3.5%)	4(7.2%)*	
Total	11(19.64 %)	13 (23.21 %)	42 (42.8 %)	

* Statistically not significant

Table-3: Intermediate Complications of Suction Band Ligation

Complication	Consultant	Resident	Total	P-Value
Discomfort/mild Pain	6(10.71 %)	7 (12.5 %)	13 (23.21 %)	P<0.05
Moderate Pain	4(7.14 %)	3 (5.3 %)	7(12.5 %)*	
Severe Pain	2(3.5%)	1 (1.78 %)	3(5.3 %)*	
Fever with Rigors	1(1.78 %)	1(1.78 %)	2 (3.78 %)*	
Burning Micturation	0	1(1.78 %)	1(1.78 %)	P<0.05
Slippage of Band	0	1(1.78 %)	1(1.78 %)	P<0.05
Total	13(23.21 %)	14 (25 %)	27 (48.21 %)	

* Statistically not significant

DISCUSSION

Various techniques have been instituted for the treatment of hemorrhoids. Ligation and excision is the conventional treatment for prolapsing hemorrhoids. This procedure can be an unpleasant experience for some patients. Complications such as per-operative and post-operative hemorrhage, urinary retention, post-operative pain and anal stenosis are well documented. To avoid these complications various alternatives such as sclerotherapy, rubber band ligation (RBL) and variety of other techniques requiring costly equipment include cryosurgery, photocoagulation, laser surgery, radio frequency coagulation and direct current coagulation, infra red coagulations and bipolar diathermy have been devised. However, these procedures are also not devoid of complications [1,4,6,7].

Surgical procedures include manual dilation of anus, internal sphincterotomy and various modifications in techniques of hemorrhoidectomy.[8-14]

In the recent past there has been a strong trend in favour of day care surgery for the treatment of internal hemorrhoids. Lord's procedure of maximum anal dilatation, introduced in 1968, is the most controversial of the newer methods of treating hemorrhoids [15,16].

Sclerotherapy is simpler than other outpatient procedures, which require costly instruments. Patients treated by sclerotherapy and RBL experience dull aching anal pain lasting from 2 hours to a couple of days[6].

Table-4: Result after two months of banding

Parameter	No of Cases

Symptoms	
No bleeding	50(89.28 %)
Some bleeding	6 (10.62 %)
Signs (Proctoscopy)	
Complete Recovery	41 (73.21 %)
Residual Bulge	09 (16.07 %)
Complete one pile left	03 (03.35 %)
Complete two pile left	03 (03.35 %)

Fig-1: Suction band ligator (Kilroid® Meditech)

Rubber Band Ligation was introduced by Blaisdell in 1958 and refined by Barron in 1963. The cost effectiveness, safety, ease of treatment for both patients and doctor combined with good clinical results has increased the popularity of RBL [17].

RBL using suction is a recent modification. It is performed by a simple disposable plastic apparatus which has both band applicator and suction device in one instrument, the haemmorhoidal mass is sucked and band is applied.

It is best suited to the most of second –degree hemorrhoids and patient friendly procedure even for pregnant, elderly and those unfit for surgery. RBL should be attempted only on second degree or early third degree hemorrhoids. Since with first degree, especially in early cases, there is insufficient tissue available to pull in to the ligature drum to make the method worthwhile, and in any event such small piles can be as effectively managed by injection sclerotherapy. Two or three haemorrhoids dealt with at the same session. Over 90% of symptomatic haemorrhoids can be treated conservatively or with RBL. The main criticism of RBL is that it does nothing to remove the skin-covered component of the pile or an associated skin covered component of the pile or an associated skin tag. The bothering skin tags may be removed under local anesthesia as an out door procedure later on[18].

Secondary hemorrhage which may be life threatening is another problem which may occur at home as the patient is treated on out patients' basis. For the third degree haemorrhoids with large skin covered component, RBL has very limited and temporary value and is no substitute for surgical treatment. As far as complications of this method are concerned, delayed massive rectal bleeding, urinary retention, pain and fever, perianal abscess& perianal fistula, band related muscosal ulcer and priapism has been reported in the literature[19].

Studies of Murie et al[20] and Poen at al[21] have shown RBL as effective as haemorrhoidectomy.The study also confirms that RBL is an effective treatment for symptomatic haemorrhoids. Kumar et al[22] described cure rate up to 71%, whereas in our study cure has been 89% and the incidence of immediate and intermediate complications was 67.3% and 74.4 respectively in their study whereas in our series it was 42.85% and 48.21 % respectively which as quite less as compared to Kumar et al series. All these patients required observation for 1 hour and later discharged, no patient was admitted to in-patient. This is comparable to other international studies [5,8]. There were no late complications. Though very rare, but serious complications, like bleeding, sepsis and mortality have been reported. Though the incidence of complications in our series is less but it is significant.

In our study RBL was performed by both by the consultant and senior surgical residents. The residents performed this procedure under supervision. There was no statistically significant difference in the incidence of complications. In a series of 100 patient's ninety one percent (91%) patients were symptoms free after six weeks of treatment[19].

In a study carried out by Murie in 1980 "in which he compared rubber band ligation and hemorrhoidectomy for second degree hemorrhoids concluded that rubber band ligation should be considered as the first line of treatment for second-degree hemorrhoids[20].

Some surgeons have performed rubber band ligation at only one site at each outpatient visit while others have applied two bands, and some have band ligation of all three hemorrhoids at single visit.

In a series of 200 patients out-come in 89% of patients with prolapse; banding was effective in relieving anal pain, pruritus ani and soiling, which are regarded as secondary symptoms of the disease[17].

CONCLUSION

There is remarkable individual variation in the management of hemorrhoids. Day care and less invasive procedures are more acceptable to the patients.

RBL is an efficient, safe and acceptable modality. Addition of suction gun to banding apparatus adds to the convenience of surgeon and the procedure becomes quick and effective. Selection criteria of patients of RBL have important impact in the outcome of management of hemorrhoids.The results of the procedure performed by the consultant or senior resident are same.

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