Changing the approach to Grade III and Grade IV Haemorrhoids management: A single centre experience in a Remote and Rural Setting

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ABSTRACT

Objective: To assess the outcome of rubber band ligation in treatment of grade III and grade IV haemorrhoids.
Study Design: Prospective interventional study.
Place and Duration: Department of Surgery, Balfour Hospital. 1st of January 2014 to the 1st of January 2021.
Methodology: All patients with Grade III and IV degree haemorrhoids were offered to have multiple sessions of haemorrhoid banding as an alternative to surgical intervention. All patients were followed up after 3 months, 6 months and 12 months in the colorectal clinic, and then telephonic consultation at 24 months to assess patient satisfaction, impact on quality of life, recurrence of symptoms (bleeding, itching, discomfort, pain) and whether they would recommend this procedure to others based on their experiences.
Results: Out of a total of 210 patients included in this study, 58.6% had grade III haemorrhoids and 41.4% had grade IV on clinical examination. Two banding sessions were required in 69.1% of the cases and three sessions needed in the remaining 38.09% patients. Post banding sessions; Haemorrhoidectomy was required in 2.85% of patients with grade III and 4.28% of patients with grade IV haemorrhoids. In follow up, 4.28% patients reported mild discomfort, 0.47% had to be taken back to theatre for removal of bands. Of the cohort 7.14% reported no improvement to symptoms.
Conclusion: Rubber band ligation in Grade III and IV haemorrhoids was found to be an effective treatment modality in our patients. We recommend using multiple sessions of banding of haemorrhoids to treat grade three and especially grade four haemorrhoids in selected patients as an alternative, since our study concludes that it yields favourable results.
Keywords: Haemorrhoids, 3rd degree, 4th degree, Management, Band ligation, Multiple sessions, Outcome, Haemorrhoidectomy

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INTRODUCTION

Haemorrhoids are a very common anorectal disease with estimates of 25% of the UK population being affected in their life time[1]. Haemorrhoids form due to distal displacement of anal cushions[2]. Painless rectal bleeding is the most common presentation of haemorrhoids. Other symptoms include pain secondary to thrombosis of haemorrhoids, peri-anal itching and prolapse in advance cases [2-3]. There are various options for treatment of symptomatic haemorrhoids including medical/conservative management, non-surgical and surgical treatment. Medical treatment is the first line therapy for first degree haemorrhoids which involve high water and fiber intake. Topical cortico-steroids can also be considered depending on symptoms[4].

Rubber band ligation was first described in the 1950s by Blaisdell[5]. It was a favored technique as it offered treatment in an outpatient setting i.e., in an office without the need for hospitalization. This was, and is still considered a cost- effective treatment when utilization of resources and the handler's time is calculated. However, its use is well described in grade one to two hemorrhoids and not for three and four[3]. Surgical hemorrhoidectomy has been well established in grades three and four, but this technique is associated with more pain, time off work and greater complications[6]. Surgical treatment is not favored by many patients due to post-operative pain that is described. Randomized trials have showed better long-term results with rubber band ligation when compared to sclerotherapy[7]. For surgical hemorrhoidectomy, a general anesthetic is required. This causes the cost to increase, hospitalization is more likely and the time off work for patients

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makes this a less favorable approach[8]. The requirement for a general anesthetic meant a vast number of patients were excluded from treatment due to the pre-morbid state and frailty. Most of the latter patients failed pre-assessment. Although hemorrhoids are not life threatening, they have a significant impact on a patient's quality of life[9]. This has driven us to offer an option banding to patients with a poor performance status who previously would have had no treatment.

The success rate of rubber band ligation ranges from 69% to 97% in 1st and 2nd degree hemorrhoids[10]. A larger number of recurrences have been described with longer follow-up periods, but recurrences can be treated with repeat sessions and time to recurrence shortened with subsequent treatment courses[9,10]. Recurrence rates are variable, with 6.6% to 18% of patients who underwent rubber band ligation requiring additional treatment sessions due to the recurrent symptoms[10].

There are studies that evaluated the use of combined non-surgical therapies[4,8,9]. These studies have shown no difference in outcome in using a single method compared to multiple non-surgical treatment modalities simultaneously.

In our study we used multiple sessions of banding in grade three and four haemorrhoids. So, our study aims to assess the outcome of rubber band ligation in treatment of grade III and grade IV haemorrhoids.

METHODOLOGY

This prospective interventional study was conducted at the General Surgical Department, The Balfour Hospital in Orkney, United Kingdom from 1st of January 2014 to the 1st of January 2021. Patients who were clinically diagnosed with grade III and IV haemorrhoids on physical examination at The Balfour Hospital's Colorectal Outpatient's Clinic and Endoscopy sessions were included in this study, and data collected from them prospectively. Patients who had previous interventions for their haemorrhoidal disease, other perianal pathologies and with significant cognitive impairment were excluded. Caldicott approval was sought and granted by the ethical committee at The Balfour Hospital. The procedure and its outcomes were explained in detail to the patient by treating surgeon. All patients were offered the opportunity to have banding and were informed that most likely multiple sessions of banding for their haemorrhoids may be needed, mainly due to the high grade of the disease and also this being an alternative to formal haemorrhoidectomy which is done under general anaesthetic and more definitive. Patients were assessed by consultants or senior fellows having equivalent experience in outpatients with special emphasis on symptoms, presentation, stage of haemorrhoidal disease and comorbidities.

Each patient was assessed in clinic prior to listing for surgery by a colorectal consultant. All procedures were performed by a consultant colorectal surgeon in the endoscopy suite and also in the outpatient's department. A single-use hand-held suction ligator was used (Kilroid ligator) for all haemorrhoids. All patients were listed as same day-case procedures, with exceptions being those patients who had travelled long distances and had to stay overnight due to logistical issues.

Patients were followed up at 3 months, 6 months and 12 months in the colorectal clinic and a telephonic consultation at 24 months post-procedure (21.5 months median). The parameters assessed were pain, pruritus, recurrent bleeding and patient satisfaction.

Data Analysis: The data was assessed with the help of SPSS version 21. The range, mean values assessed for age, and % and 95% confidence interval was assessed for all other parameters.

RESULTS

A total of 210 patients who fulfilled the criteria were included in this study and among them 58.6% (n=123) were diagnosed with grade III and 41.4% (n=87) with grade IV haemorrhoids. Demographic distribution shows 1:1.44 (n=124/86) male to female ratio with age ranges between 19-76 years (median 47.5). All haemorrhoid banding procedures were done by a Consultant General Surgeon. Procedures were done in both in outpatients department (n = 68, 32.38%) and also in the endoscopy department (n = 142, 67.62%).

Table 1 shows the co-morbidities encountered by patients in the study which in combination, caused frailty and were an attributing factor to opting for a non-surgical approach to treatment.

Table – I: Frequency of co-morbidities observed in patients (N=210)

Co morbidities	n,%
Diabetes type 2	24 (11.4%)
IHD	31 (14.7%)
Hypertension	47 (22.3%)
Atrial Fibrillation	12 (5.71%)
Obesity	17 (8.10%)
Stroke	3 (1.43%)
Hypothyroidism	2 (0.95%)

The rectal bleeding was the commonest presentation (n=145, 69%), followed by itching (n=85, 40.4%) and pain (n=73, 34.7%) as reported by our patients.

(Table-II) Among all patients, 61.9% (n=130) patients needed two sessions of banding while 38.9% (n=80) patients needed three sessions. Despite banding sessions, 2.85% (n=6) patients with grade III haemorrhoids needed surgical intervention, and same for 4.28% (n=9) patients with grade four haemorrhoids.

Table – II: Frequency of presenting symptoms in patients with grade III and IV haemorrhoids (N=210)

Presenting Symptoms	n, %
Rectal bleeding	145 (69%)
Pain	73 (34.7%)
Itching	85 (40.4%)
Difficulty with sitting and walking	61 (29%)

Mild discomfort was the most common symptom (n=9, 4.28%), followed by pruritus observed in 2.85% (n=6) patients. Bleeding

after banding was reported by 1.88% (n=4) while band removal was done in only one (0.47%) of patient due to severe pain after banding. Recurrence was observed in 8.09% (n=17) patients at 21.5 months (median) follow up.

Regarding patient satisfaction about procedure, 7.5% (n=15) patients have reported no resolution of their symptoms after banding sessions, while 91.4% (n=192) patients were satisfied with results and would recommend multiple sessions of banding. About 5.7% (n=12) patients would not recommend it due to discomfort, pain and non-resolution of symptoms, and 2.3% (n=5) patients were uncertain (table-III).

Table – III: Frequency of complication and satisfaction level after hemorrhoid banding during follow up (N=210)

Symptom	n,%
Mild discomfort	9 (4.28%)
Severe pain (removal of bands)	1 (0.47%)
Bleeding	4 (1.88%)
Pruritus	6 (2.85%)
Recurrence	17 (8.09%)
No resolution of symptoms	15 (7.5%)
Satisfied with procedure	192 (91.4%)
Not recommend to others	12 (5.7%)

DISCUSSION

The study evaluated the outcome of banding in grade three and four haemorrhoids in terms of patient satisfaction and symptom control. Our results demonstrated only 6% patients in grade three and 9% in grade four haemorrhoids needed haemorrhoidectomy. Previous studies have shown comparable results that rubber band ligation is a safe and effective procedure[5-6].

Our results were similar to other studies done in the past[11-13] where 1% returned to theatre for removal of bands and subsequent haemorrhoidectomy compared to only 0.47% in our study.

Pruritus is a well described presentation and can also persist post intervention. In most cases these incidents tend to be self limiting[14] as was the case with this study, with resolution of symptoms occurring within a week. Post-operative bleeding is also reported, but most bleeding is self-limiting without need for any intervention, however in some studies patients did require transfusion[13]. Minor bleeding in these studies was not quantified and spotting after banding was expected, so not considered as a complication.

At the interval follow up appointments, we assessed reoccurrence of the haemorrhoids, discomfort, pruritus, resolution of pain and patient satisfaction. Looking at these parameters enabled us to have a holistic view of medical achievement, patient experience and satisfaction. Recurrence rate was 8.09 % in 21.5 months median follow up. Conventional haemorrhoidectomy has a recurrence rate of 5- 17.5%[15]. These results show that outcomes of band ligation in terms of short-term recurrence is comparable with gold standard surgical haemorrhoidectomy. Further upside is that banding is cost effective, does not require regional or general anaesthetic and is well tolerated in most patients. Multiple sessions banding, especially in grade four haemorrhoidal diseases can be highly effective in high risk patients with significant co-morbidities.

Our results also demonstrated that 91.4% patients who had banding procedure were satisfied. Patients' measure of success was determined by improvement of symptoms, either completely non symptomatic or improved control. Awad et[15] all also reported 84% improvement after banding of grade four hemorrhoid.

In terms of pain, 4.28 % patients had mild pain and 0.47% patients experienced severe pain enough pain requiring band removal in theatre. While conventional procedural post-operative pain is the major cause of concern for patients, pain post rubber band ligation resolved within 24 hours of intervention. When compared to other techniques – in staple haemorrhoidectomy, the short-term follow-up at 1 month and at 1 year showed that 46% of the patients experienced moderate anal pain for 24 hours post procedure[16,17]

A large randomised control study showed that although recurrence after haemorrhoidal artery ligation (HAL) was lower than single rubber band ligation (RBL), HAL was more painful than RBL.[18] The study had similar findings when they asked for patients' preference, with most preferring multiple sessions of RBL compared to more invasive HAL. There has been use of novel equipment such as cooling systems to make HAL more tolerable and comfortable, despite this, patients still prefer RBL since pain is mild [19]. Quoted reoccurrence rates from HAL were comparable with RBL[20]. Therefore, RBL is a highly cost-effective way of treating haemorrhoids, as training and skill is less than that which is required for other techniques. HAL is more expensive and unlikely to be cost-effective in terms of incremental cost per case. [21] RBL is a safe and effective procedure with reduced hospitalisation days making it more economical[22]. Complication rates are low and patient satisfaction is high amongst our cohort. Haemorrhoidectomy produced better long-term symptom control in patients with grade three and four haemorrhoids, but was associated with more postoperative complications than RBL. Consideration should be taken to offer patients multiple sessions of RBL, as it is better tolerated by patients with multiple co-morbidities and suited with those who are not fit for surgical intervention. It can also be done in outpatient's clinic.

CONCLUSION

Haemorrhoid banding in Grade-III and IV was found to be effective. We recommend the use of multiple sessions of banding of haemorrhoids to treat grade III and especially grade IV haemorrhoids in select patients as an alternative.

AUTHOR'S CONTRIBUTION

Gandiya T: Manuscript writing, Literature review, Data analysis
Hina S: Literature review, Manuscript writing, Proof reading
Rafi A U: Literature review, Data analysis
Alubaidi K: Conceived idea, Designed methodology**,** Operating surgeon, Manuscript writing, Data analysis

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