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Comparative study of various modalities of treatment for internal Haemorrhoid

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Abstract
Background: Haemorrhoid is one of the most common gastrointestinal disorders seen by the general surgeons. Despite its prevalence and low morbidity, haemorrhoid disease has a high impact on quality of life. Management options for disease of haemorrhoids are diverse, ranging from conservative measures to a variety of office and operating room procedures.
Aims and Objective
1. This study was aimed to evaluate the role of open haemorrhoidectomy, banding and cryosurgery in the treatment of haemorrhoids.
2. To compare the above treatment modalities and to know its advantages and disadvantages.
Methods: Among the 120 patients who were diagnosed to be having grade 2 and grade 3 intrnal haemorrhoids were randomly grouped into three categories. 40 patients underwent open haemorrhoidectomy, 40 patients underwent banding and 40 patients underwent cryosurgery. Detailed history was taken followed by per rectal digital examination and proctoscopy. Age group incidence, most common presenting complaint of haemorhhoids was studied. Complications were compared like, postoperative pain, bleeding per rectum, discharge per rectum, stenosis and reccurrence. Vas score for pain considered.
Results: Highest incidence of haemorrhoids was found in 4th decade. Most common presenting complaint was bleeding per rectum. Postoperative stay is least for barron's banding and cryosurgery while maximum in open haemorrhoidectomy. Postoperative bleeding, pain was maximum in open haemorrhoidectomy while least for cryosurgery. Reccurence was maximum in barron's banding ligation and least in open haemorrhoidectomy. Stenosis is maximum in open haemorrhoidectomy.
Conclusion: After comparing advantages and disadvantages it can be concluded cryosurgery is definitely having edge in treating grade 2 and grade 3 haemorrhoid compared with banding and open haemorrhoidectomy.

Keywords: haemorrhoids; haemorrhoidectomy; cryosurgery

Introduction

Hemorrhoids, or "piles", is one of the most common anorectal disorders, with a prevalence of 39% of the population, of whom 44.7% are symptomatic [1, 2] Hemorrhoids are defined as the symptomatic enlargement and distal displacement of the normal anal cushions [3]. Hemorrhoids are cushions of sub mucosal tissue containing venules, arterioles and smooth muscle fibers that are located in the anal canal [4]. Hemorrhoids or piles are symptomatic anal cushion [4]. Once hemorrhoids are diagnosed and their exact nature is determined, clinician need to decide on the best treatment strategy. Among such methods are banding, injection sclerotherapy, open hemorrhoidectomy, infrared photocoagulation, stapler and cryosurgery [5]. The present study is done to compare following treatment modalities:- Banding, Cryosurgery and Open hemorrhoidectomy.

Aims and Objectives

1. To evaluate the role of banding, cryosurgery and open hemorrhoidectomy in the treatment of hemorrhoids.
2. To compare the above treatment modalities and to know its advantages and disadvantages.
3. Asses the patient response to such treatment.

Materials and Method

Source of data:-The study group of patients with complains of bleeding per rectum and on examination diagnosed to be having grade II and grade III hemorrhoids attending the outpatient department of General surgery at KVG Medical College & Hospital, Sullia.
Methods of data collection

- Inclusion criteria- all patients who were diagnosed to be having grade II and III internal hemorrhoids.
- Exclusion criteria- Patients having external haemorrhoids. Patients having fissure in ano
- Study design- Prospective study
- Sample size- 120
- Sampling procedure

Among the 120 patients who were diagnosed to be having grade II and III internal haemorrhoids between the periods June 2018 to October 2019 were randomly grouped equally into three categories. Patient who came to outpatient department with complaints of bleeding per rectum or mass per rectum were subjected for detailed history taking which included symptoms

and duration of disease. Then they were subjected for per rectal digital examination. Proctoscopy was done to find out the internal hemorrhoids and its degree and position. Systemic examination and basic investigation were done, according to severity and type of symptoms and degree of hemorrhoids patients were subjected for banding, cryosurgery and open hemorrhoidectomy. Follow up of patients after treatment was done by history, per rectal examination and Proctoscopy to assess patient's response and rate of complications. Complication were compared like, postoperative pain, bleeding per rectum, discharge per rectum, stenosis and recurrence. Analysis of data-Chi square test was used to analyze the findings and complication. Follow up-Patients were followed post operatively till six months.

Observation and Result

TABLE 1: AGE DISTRIBUTION OF THE STUDY POPULATION

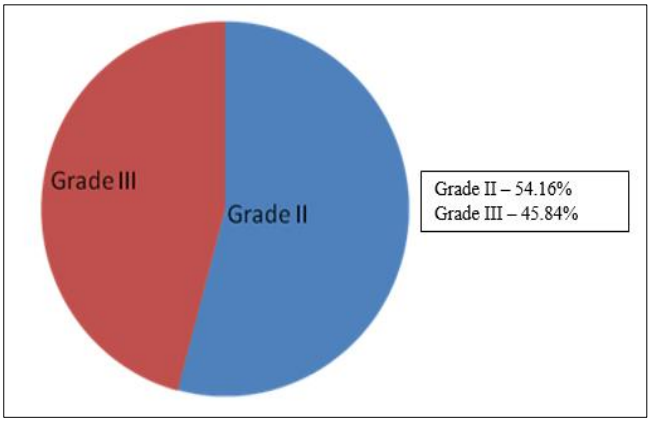
S NO.	AE GROUPS	NO. OF PATIENTS	PERCENTAGE
1	21-30 YEARS	2	1.66 %
2	31-40 YEARS	30	25 %
3	41-50 YEARS	41	34.16 %
4	51-60 YEARS	34	28.33 %
5	61-70 YEARS	12	10 %
6	71-80 YEARS	1	0.83 %
	TOTAL	120	100 %

Table 2: Distribution of Study Population Based on Gender

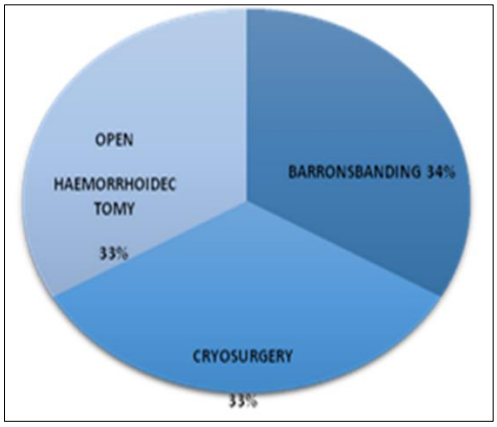
S no.	Gender	No. of patients	Percentage
1	Male	63	52.5 %
2	Female	57	47.5%

Table 3: Distribution of Cases Based On Their Presenting Complaints

SNO.	PRESENTING COMPLAINTS	NO. OF PATIENTS	PERCENTAGE
1	BLEEDING PER RECTUM	99	82.5 %
2	MASS PER RECTUM	9	7.5 %
3	PAIN DURING DEFECATION	1	0.83 %
5	BLEEDING PER RECTUM AND MASS PER RECTUM	4	3.33 %
6	BLEEDING PER RECTUM AND PAIN DURING DEFECATION	2	1.66 %
7	BLEEDING PER RECTUM AND CONSTIPATION	4	3.33 %
8	BLEEDING PER RECTUM, MASS PER RECTUM AND CONSTIPATION	1	0.83 %



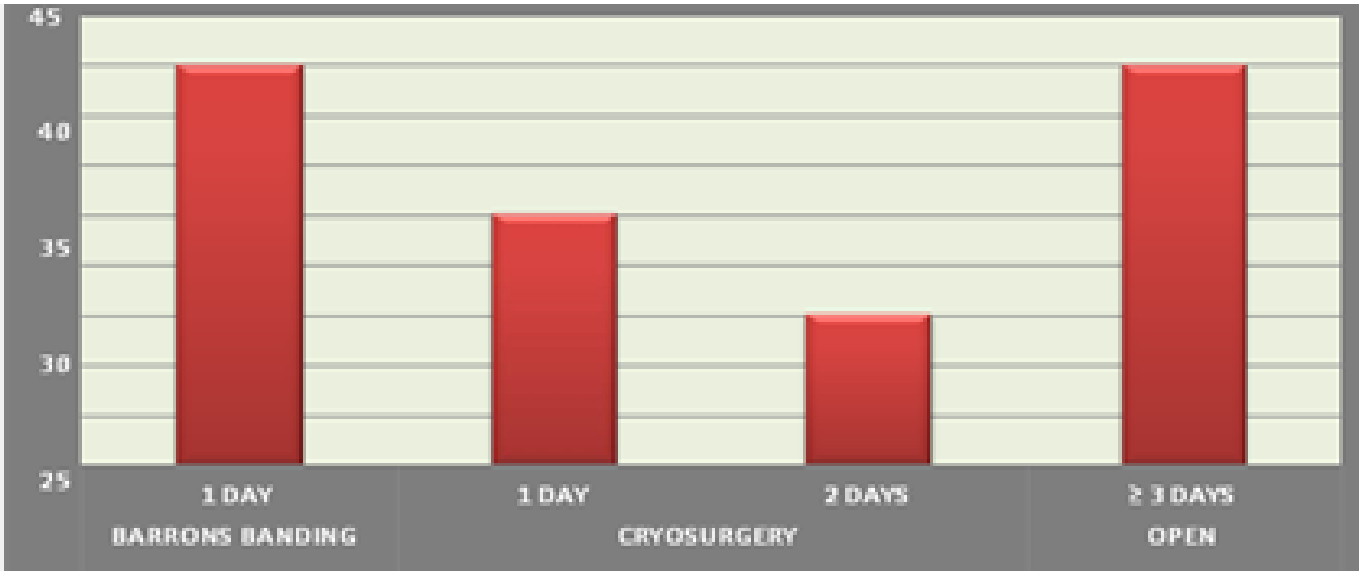
Graph 1: Distribution of Cases Based on Grades of Haemorrhoids



Graph 2: Type of Surgery Done in Patients with Haemorrhoids

Table 4: Type of Surgery Done in Patients Admitted with Different Grades of Haemorrhoids

S No.	GRADE OF HAEMORRHOIDS	TYPE OF SURGERY DONE	NO. OF PATIENTS	PERCENTAGE
1	GRADE II	BARRONS BANDING	21	17.5%
		CRYOSURGERY	23	19.16%
		OPEN HAEMORRHOIDECTOMY	21	17.5%
2	GRADE III	BARRONS BANDING	19	15.83%
		CRYOSURGERY	17	14.16%
		OPEN HAEMORRHOIDECTOMY	19	15.83%



Graph 3: Duration of Hospital Stay Who Underwent Different Surgeries for Haemorrhoids

Table 5: Postoperative Complications Seen in Patients who Underwent Different Surgeries

Sno.	Complications	No. of patients	Percentage
1	Pain	84	70 %
2	Bleeding Per Rectum	23	19.16 %
3	Discharge Per Rectum	17	14.16 %
4	Stenosis	5	4.16 %
5	Recurrence	13	10.83 %

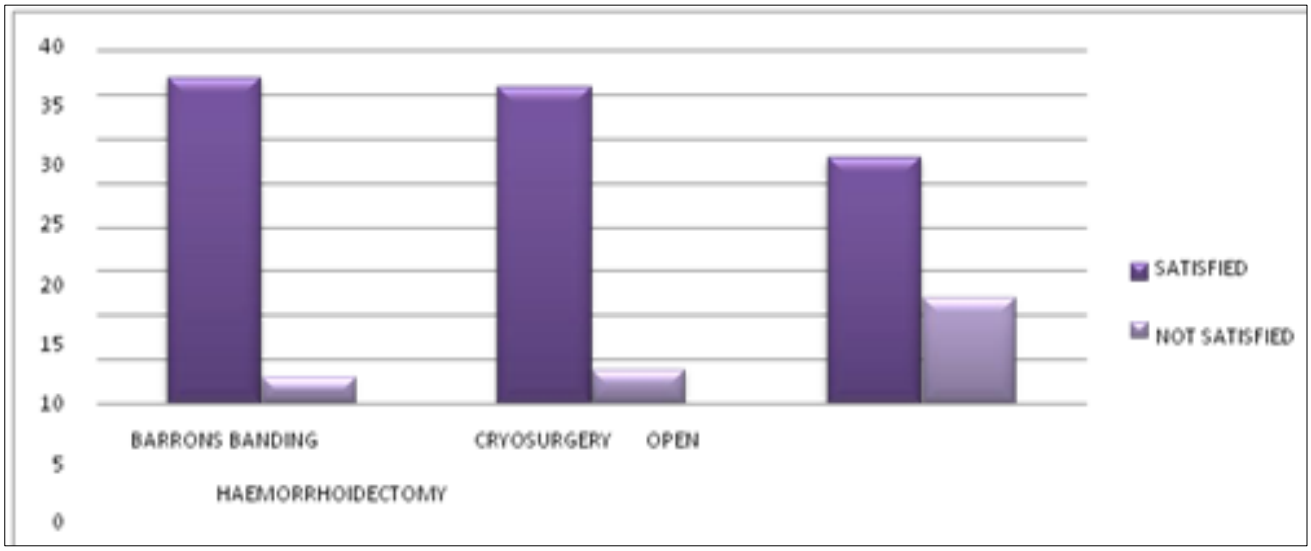
Table 6: Association of Pain with Different Surgical Techniques

Type of Surgery	Pain Present No. (%)	Pain Absent No. (%)	CHI Square Value	p value
Barrons Banding	26 (30.95)	14 (38.89)	0.952	0.621
Cryosurgery	28 (33.33)	12 (33.33)		
Open Hemorrhoidectomy	30 (35.71)	10 (27.77)		
Total	84 (100)	36 (100)		

Among 84 cases who complained of pain, maximum number of cases (35.71) was those who underwent open hemorrhoidectomy, followed by cases who underwent cryosurgery (33.33) and Barrons banding (30.95). Statistically there was no significant association between type of surgery and pain as a complication.

Table 7: Association between Type of Surgery and Different Complications

TYPE OF SURGERY	PAIN	BLEEDING PER RECTUM	DISCHARGE PER RECTUM	STENOSIS	RECURRENCE
BARRONS BANDING	26 (30.9)	5 (21.74)	0 (0)	0 (0)	7 (53.85)
CRYOSURGERY	28 (33.3)	2 (8.69)	17 (100)	0 (0)	4 (30.77)
OPEN HEMORRHOIDECTOMY	30 (35.7)	16 (69.56)	0 (0)	5 (100)	2 (15.38)
TOTAL	84 (100)	23 (100)	17 (100)	5 (100)	13 (100)



Graph 4: Satisfaction Level in Patients who underwent Haemorrhoid Surgeries

Discussion

Hemorrhoid is one of the most common gastrointestinal disorders seen by the general practitioners. Despite its prevalence and low morbidity, haemorrhoid disease has a high impact on quality of life. Management options for disease of Haemorrhoids are diverse, ranging from conservative measures to a variety of office and operating-room procedures. In our study maximum numbers of patients were in the age group of 41-60 i.e. 71 out of 120

patients in that also maximum were in 41-50 age group (41 patients).[12] Mean ages in our study was 47.53 yrs. This is comparable to that reported by Murie *et al*. [13] who reported the mean age of 50 ± 12 years, Konings *et al*. [14] who reported the mean age of 51 years and Hosch *et al*. [15] who reported the mean age of 50 years. 99 patients presented with only bleeding per rectum. 9 patients presented with only mass per rectum.4 patients presented with bleeding per rectum and mass per rectum.1 patient presented with bleeding per rectum mass per rectum and constipation. 4 patients presented with bleeding per rectum and constipation.2 patients presented with bleeding per rectum and pain during defecation while 1 patient presented with only pain during defecation. Maximum number of patients presented with complaints of bleeding per rectum i.e 110 patients out of 120 which is 91.6%. Which favorably correlates with the findings of Steinberg *et al*. [16] (91.2 %), While studies conducted by O'Regan *et al*. [17] showed 98 % cases with bleeding per rectum. Studies conducted by Hosch *et al*. showed [17] 82 % cases with bleeding per rectum, and study conducted by Murie *et al*. [18] showed 84 % cases with bleeding per rectum. Similar number of patients underwent all three procedures that is 40 patients underwent open hemorrhoidectomy, 40 patients underwent barrons banding and 40 patients underwent cryosurgery. Postoperative stay was least for Barrons banding all patients were treated on outpatient basis and discharged on the same day. Postoperative stay was maximum for open hemorrhoidectomy patients with all patients staying more than three days. Maximum postoperative stay for cryosurgery was two days. Most common postoperative complication after all surgeries was pain, present in 70% of patients. Among 84 cases who complained of pain, maximum number of cases 30 (35.71) were those who underwent open hemorrhoidectomy, followed by cases who underwent cryosurgery 28 (33.33) and Barrons banding 26 (30.95). 30 patients out of 40 who underwent open hemorrhoidectomy complained of pain. 26 patients out of 40 patients who underwent Barrons banding and 28 out of 40 patients who underwent cryosurgery complained of pain. In a study done by N. Krishna Mohan et.al [19] at Secunderabad, Out of 40 patients who underwent hemorrhoidectomy, 37 patients had local pain. Out of 40 patients who underwent banding, 30 patients had local pain. In a study done by NFS WATSON *et al*. [20] Out Of 183 patients of Rubber band ligation, the commonest symptom experienced following RBL was pain, which occurred in almost 90% of patients. 16 out of 40 patients who underwent hemorrhoidectomy had postoperative bleeding as a complication followed by 5 out of 40 for Barron's banding and least for cryosurgery i.e. 2 out of 40 patients. Statistical test was done to see if there was a difference in occurrence of bleeding per rectum as a complication in different surgeries performed. Chi square test was performed. There was a statistically significant difference that was observed. Among 23 cases who had bleeding per rectum, maximum number of cases were those who underwent open Hemorrhoidectomy 16(69.56) followed by cases who underwent Barron's banding 5(21.74) and cryosurgery 2(8.69). In a study done by N. Krishna Mohan et.al [19] at Secunderabad, Out of 40 patients who underwent banding, 10 patients had bleeding per rectum Out of 40 patients who underwent hemorrhoidectomy, 19 patients had bleeding per rectum. In a study done by NFS WATSON etal, [20] Out of 183 patients of Rubber band ligation 86 patients (65%) experienced rectal bleeding after RBL. Postoperative discharge per rectum was found maximum in cryosurgery patients, 17 out of 40 patients. And it was statistically significant. In a study done by J.A. SOUTHAM, on cryosurgery postoperative discharge was present in 55 patients out of 104 patients [21]. Stenosis was found maximum 5 out of 40 patients of hemorrhoidectomy while none in cryosurgery and banding. Statistically difference was significant. Bouchard *et al*, [22] found anal stenosis in 23 patients out of 633 patients in the one-year outcome of open hemorrhoidectomy. Maximum recurrence rate was found for Barrons banding, 7 out of 40 patients (17.5%) followed by cryosurgery 4 out of 40 patients (10%). And least with hemorrhoidectomy, 2 out of 40 patients (5%). Walker *et al*, [23] have reported a high recurrence rate of 27% at 1 year in band ligation. Mean time of wound healing was compared. It was least for barrons banding, 7.55 ± 0.87 days, followed by open hemorrhoidectomy 15.15 ± 1.59 days and maximum for cryosurgery, 22.05 ± 1.02 days. Patient's response was assessed in terms of satisfaction with treatment, 92.5% of banding patients were satisfied with treatment, 90% of cryosurgery patients were satisfied with treatment, and only 70% of hemorrhoidectomy patients were satisfied with treatment. Statistically the difference was significant.

Conclusion

Among many treatment modalities available for hemorrhoids, Open hemorrhoidectomy, Barron's banding and cryosurgery treatment modalities were compared. Milligan-Morgan or open hemorrhoidectomy is a method requiring hospital admission, spinal anesthesia, more postoperative stay and more postoperative pain compared to other treatment. Similarly postoperative bleeding, stenosis rate is more in open hemorrhoidectomy with poor satisfaction. Barron's banding is a procedure done under local anesthesia, less postoperative stay, less postoperative pain and bleeding, less stenosis, good patient satisfaction more number of recurrence rate. Cryosurgery is simple procedure done under local anesthesia, less postoperative stay, least postoperative pain and less postoperative bleeding but postoperative discharge more in more no of patients, but less stenosis and less recurrence with good patient satisfaction rate. After comparing advantages and disadvantages it can be concluded cryosurgery is definitely having an edge in treating grade II and grade III hemorrhoids compared with banding and open hemorrhoidectomy.

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