ORIGINAL ARTICLE

Internal Hemorrhoids and Sigmoidoscopy; A Retrospective Analysis of Grades and Other Anorectal Disorders

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ABSTRACT

Aim: To evaluate grades of internal hemorrhoids and diagnosis of associated anorectal disorders in patients who underwent sigmoidoscopy at Liver Clinic, Lahore, Pakistan.
Study Design: Retrospective cohort study
Methods: In a retrospective analysis of 481 patients who were diagnosed to have internal hemorrhoids during sigmoidoscopy, the gender, age groups, indication for sigmoidoscopy, grade of internal hemorrhoids, and therapeutic maneuver offered were the qualitative variables, while age of the patients was the only quantitative variable. The data was analyzed on SPSS version 15.
Results: Out of a total of 1004 patients who underwent sigmoidoscopy, 481(47.9%) had internal hemorrhoids; 340 (70.7) were male and 141 (29.3%) were females. The commonest age group affected with internal hemorrhoids was middle aged group (53.4%) with a mean age of 45.78±13.45.The commonest grade of internal hemorrhoids was grade I (46.4%), followed by grade II (40.3%), grade III (13.1%) and grade IV (0.2%). The commonest presenting complaint was bleeding PR (50.3%). 80.7% patients with grade I internal hemorrhoids (180 out of 223) were diagnosed accidently where sigmoidoscopy was performed for some other indication. 191(41.4%) patients received sigmoidoscopic assisted Rubber band ligation (RBL). 13.9% patients with internal hemorrhoids had additional associated disorders like anal fissure (25.4%), external hemorrhoids (17.9%), tight sphincter without visible fissure (14.9%), adjacent/ stagnant proctitis (14.9%) and excessive mucous in rectum (13.4%),
Conclusion: Sigmoidoscopy is an excellent diagnostic and therapeutic tool for internal hemorrhoids which are common and equally prevalent in both genders. Middle aged adult group and bleeding PR are predictive of finding hemorrhoids on subsequent sigmoidoscopic examination.
Keywords: Hemorrhoids, Rubber band ligation, Bivariate analysis, Odds ratio,

INTRODUCTION

Hemorrhoids are dilated vascular channels in anorectum[1], categorized into external and internal depending on their presence below and above dentate line respectively[2]. External hemorrhoids should be differentiated from anal skin tags and anal warts. Anal skin tags are not external hemorrhoids but residual excess tissue formed due to prior thrombosis of external hemorrhoids or from perianal Crohn's disease[3], while anal warts are caused by herpes simplex virus (HSV)[1]. Internal hemorrhoids are graded from I to IV if they do not prolapsed distal to the dentate line, reduce spontaneously, requires manual reduction and cannot be reduced respectively[4]. Treatment for grade I and II internal hemorrhoids includes stool softening + venous tone stabilizers like diosmin. For grade II and III internal hemorrhoids or if medical treatment is insufficient, non-surgical management is offered firstly that includes Rubber band ligation (RBL), Sclerotherapy, Cryotherapy or Infrared photocoagulation[5,6]. RBL is performed using Barron ligator, suction ligator or sigmoidoscopy.[7]Grade IV internal hemorrhoids or large symptomatic external hemorrhoids are almost always treated surgically[8]. The success rate of RBL is 65% to 75%, while that of hemorrhoidectomy is> 85 % on 10 years follow up. Anal stenosis may occur in 5% to 10% patients following hemorrhoidectomies, and may require anal dilation.

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The objective of this study was to evaluate grades internal hemorrhoids and diagnosis of associated anorectal disorders in patients who underwent sigmoidoscopy at Liver Clinic, Lahore, Pakistan.

MATERIAL AND METHODS

This was a retrospective cohort study carried out at Liver clinic, 250 Shadman Lahore. All the patients who were diagnosed as having internal hemorrhoids on sigmoidoscopy from February 2010 to July 2017 were included. The ages of the patients were categorized into child, young adults, middle age adults and older adults if their ages were <19 years, 19-35 years, 36 to 55 years and > 55 years respectively[9].

Hemorrhoids above and below dentate line were named as internal hemorrhoids and external hemorrhoids respectively[2]. We graded internal hemorrhoids from I to IV, where accidentally found asymptomatic grade I and II were advised no treatment, symptomatic grade 1 were offered only medical management, and grade II symptomatic and grade III were ligated with RBL using sigmoidoscope. Grade IV internal hemorrhoids or large symptomatic external hemorrhoids were referred for hemorrhoidectomy or hemorrhoidal artery ligation (HAL). The indications for sigmoidoscopy were bleeding per-rectum (PR) Altered bowel habits (ABH), Painful defecation, and follow up after some therapeutic maneuver. Large bowel diarrhea, Constipation, PR mucous, Abdominal distension with inadequate evacuation were named as ABH. The disorders associated with internal hemorrhoids like anal fissure, external hemorrhoids, tight sphincter, adjacent proctitis, excessive mucous in rectum, rectal Varix and anal stenosis, were also noted.

The gender, age groups, indication for sigmoidoscopy, grade of internal hemorrhoids, and therapeutic maneuver offered were the qualitative variables, while age of the patients was the only quantitative variable. The valuable data was analyzed on SPSS version 15.

During descriptive interpretation of data, means and standard deviations were calculated for the presentation of quantitative variables, and frequencies and percentages were computed for qualitative variables. The bivariate analysis was performed in order to determine the significant relation of different predictive factors with presence of internal hemorrhoids. While applying chi-square test of independence, a p value of equal to or less than 0.05 was considered as significant. Moreover, odds ratio along with their 95% confidence interval (CI) were also calculated for each association[10].

RESULTS

Table 1: Qualitative variables associated withinternal hemorrhoids (n = 481)

Qualitative variables /Categories	Frequency
Age groups	
Children	1(0.2%)
Young adults	128(26.6%)
Middle aged adults	257(53.4.3%)
Older adults	95(19.8%)
Gender	
Male	340(70.7%)
Female	106(29.3%)
Indication of sigmoidoscopy	
Bleeding PR	242(50.3%)
ABH	207(43.0%)
Painful defecation	30(6.2%)
FU	2(0.4%)
Grade of internal hemorrhoids	
Grade I	223(46.4%)
Grade II	194(40.1%)
Grade III	63(13.1%)
Grade IV	1(0.2%)
Therapeutic maneuver offered	
Hemorrhoidal Band Ligation	199(41.4%)
Medical management	43(8.9%)
No management	239(49.7%)

PR= Per-rectum; ABH= Altered bowel habits; FU= Follow up after some therapeutic maneuver

A total of 1004 patients underwent sigmoidoscopy, out of which 481(47.9%) had internal hemorrhoids. Among patients suffering from internal hemorrhoids, 340(70.7) were male and 141(29.3%) were females. The age of the Patients with internal hemorrhoids ranges from 14 to 95 years with a mean age 45.78±13.45. The commonest age group affected with internal hemorrhoids was middle aged group (53.4%), followed by young adults (26.6%), older adults (19.8%) and children (0.2%). (Table 1)

The commonest grade of internal hemorrhoids found was grade I (46.4%), followed by grade II (40.3%), grade III (13.1%) and grade IV (0.2%). In patients whom internal hemorrhoids were diagnosed, the indication of sigmoidoscopy / chief presenting complaints were bleeding PR (50.3%), ABH (43%), painful defecation (6.2%) and follow up after some therapeutic maneuver (0.4%).In 481 patients with internal hemorrhoids, 191(41.4%) got RBL; where 141 (72.7%) patients had grade II and 58 (29.1%) patients had grade II internal hemorrhoids. 19.3% patients with grade I internal hemorrhoids (43 out of 223) had bleeding PR and were advised medical management. Rest 80.7% patients with grade I internal hemorrhoids (180 out of 223) were diagnosed accidently where sigmoidoscopy was performed for some other indication (Table 1).

67(13.9%) patients with internal hemorrhoids had additional associated disorders like anal fissure (25.4%), external hemorrhoids (17.9%), tight sphincter without visible fissure (14.9%), adjacent/ stagnant proctitis (14.9%), excessive mucous in rectum (13.4%), rectal Varix (11.9%) and anal stenosis (1.5%) (Table 2)

Multiple predictors were correlated with the presence of internal hemorrhoids on sigmoidoscopy. Age group (p=0.000) and bleeding PR as indication of sigmoidoscopy (0.009%) had a statistically significant association with presence of internal hemorrhoids, while gender (p=0.890) had no statistically significant association with presence of internal hemorrhoids. The internal hemorrhoids were most common in middle aged group and least common in children. Similarly among the patients with internal hemorrhoids, bleeding PR was the chief presenting complaint/ indication for sigmoidoscopy in 50.3% patients while in patients without internal hemorrhoids, bleeding PR was seen in only 42.1%. (Table 3)

Table 2:Associated disorders with internal hemorrhoids (n=67/481)

Associated disorders with internal hemorrhoids	Frequency
Internal hemorrhoids with anal fissure	17 (25.4%)
Internal hemorrhoids with External hemorrhoids	12 (17.9%)
Internal hemorrhoids with Tight sphincter, without visible fissure	10 (14.9%)
Internal hemorrhoids with adjacent proctitis	10 (14.9%)
Internal hemorrhoids with Excessive mucous in rectum	9 (13.4%)
Internal hemorrhoids with Rectal Varix	8 (11.9%)
Internal hemorrhoids with Anal stenosis	1 (1.5%)

Table 3:Correlation of Internal hemorrhoids with different parameters (n = 488/1004).

Parameters /Categories	Internal Hemorrhoids		p-value	Odd ratio with 95% Confidence interval
	Yes	No		
Male	340 (70.7%)	367 (70.2%)	0.890	1.025 (0.781-1.345)
Female	141 (29.3%)	156 (29.8%)		
Age groups:				
Children	1 (0.2%)	38 (7.3%)	0.000	
Young adults	128 (26.6%)	164 (31.4%)		
Middle aged adults	257 (53.4%)	220 (42.1%)		
Older adults	95 (19.8%)	95 (19.8%)		
Bleeding PR	242 (50.3%)	220 (42.1%)	0.009	0.717 (0.559-0.920)
Others	239 (49.7%)	303 (57.9%)		

*Odd ratio can only be computed for 2 X 2 table

DISCUSSION

Internal hemorrhoids are a common problem, with an estimated prevalence of 4.4 in general population[11]. However in symptomatic patients presenting at sigmoidoscopy suite, internal hemorrhoids are diagnosed in larger number of patients. In a large European study[12], the prevalence of hemorrhoids in patients undergoing sigmoidoscopy was 38.9% with a grade wide distribution from I to IV, 72.9%, 18.4%, 8.2% and 0.5% respectively. In our study, the prevalence of hemorrhoids was 47.9% with a similar decremental grade wide distribution. In all literature[13], the most commonly reported symptom in patients with hemorrhoids is bleeding PR. Similarly, in our study, the commonest presenting complaint was bleeding PR. At the same time, 49.7% had no H/O bleeding PR rather sigmoidoscopy was performed for some other complaint or purpose and hemorrhoids were found accidently. This is because of high prevalence of hemorrhoids in our population. Some larger studies are required to further validate these findings.

In patients with hemorrhoids, coincidental findings have been mentioned in studies[14]; however our study is a better source that provides frequency distribution of associated disorders like anal fissure, rectal varix and stagnant proctitis. Anal fissure is a tear in anoderm[15], while rectal varices are portosystemic collaterals that form as a complication of portal hypertension[16]. Stagnant proctitis occurs due to venous stasis in constipated patients[17]. Similarly, we also found external hemorrhoids, tight sphincter, excessive mucous in rectum and anal stenosis in some patients suffering from internal hemorrhoids.

Rubber band ligation (RBL) is a non-surgical therapeutic maneuver for grade II and III internal hemorrhoids with success rate upto 75%[1]. We offered RBL to 199 patients using six shooter multiband ligator on the tip of sigmoidoscope, where visualization was excellent, so better results were achieved. Symptomatic grade I internal hemorrhoids were managed with stool softening± venous tone stabilizers like diosmin.

The international data suggests that incidence of hemorrhoids increases with age and approximately 50% population over age 50 years have some degree of hemorrhoids[18,19]. In our study, we divided ages of the patients into 4 groups. We wonder to see that presence of hemorrhoids was most common in middle aged adults followed by in young adults and correlation was statistically significant (p=0.000). Why younger age groups were affected in our population, further studies are required to find the cause.

In our study, two pre examination parameters (middle aged adult group, Bleeding PR as chief presenting complaint) were predictive of finding internal hemorrhoids on subsequent sigmoidoscopic examination. Further studies are required to validate these findings.

CONCLUSION

This study concluded that internal hemorrhoids are a common finding during sigmoidoscopy, where a large proportion of the patients can be offered therapeutic sigmoidoscopic assisted band ligation. They are equally prevalent in both genders. Middle aged adult group and bleeding PR are predictive of finding hemorrhoids on subsequent sigmoidoscopic examination.

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